The Dealership of Tomorrow: 2025

Retail automotive trends for the next decade

January 2017

An independent study by Glenn Mercer, GM Automotive LLC
Prepared for the National Automobile Dealers Association

Executive Summary

Our overall top-level conclusion is that, over the next decade, franchised new-car dealers operating in the USA will see many changes to how their stores are set up and run, but no significant disruption to their underlying business model. Such an evolutionary prediction is unfashionable in today's environment, dominated as it is by pronouncements about accelerating rates of change in every aspect of life. But car retailing is an enormous industry that is shaped by over a century of habits, consumer preferences, regulatory regimes, and constant adaptation to an evolving environment. We see little in our survey that would dramatically alter that trajectory. Accordingly, we see franchised new-car dealerships continuing to evolve, but at a moderate pace, over the next decade.

That does not mean we do not see significant changes taking place, from the slow but steady consolidation of store ownership, to growing sales of electric vehicles, to accelerating penetration of autonomous driving features, and much more. We even see the risk of a dramatic shock to the system, if mobility service companies succeed in breaking the centuries-old bond of ownership between Americans and their means of transport. **And by the end of the decade we see the typical dealership having evolved from the margin-optimizing operation that it once was, to one that is more focused on sales volume.**

Below these general findings, we present our detailed results in two strands: core conclusions about the dealership system overall, and additional findings that focus on several topics of specific interest. **In terms of core conclusions (discussed in the numbered chapters), in 2025:**

- We expect to see a rate of **unit sales** similar to today's 17 million level, but with a shift in mix to the more expensive and wealthier ends of the vehicle and customer spectrums.
- We project that the **physical dealership** still exists, even if much of its activity is online, and even if its physical format may be substantially altered.
- We believe the **independent franchised dealership model** will remain very dominant through 2025. But we also expect **factory-direct models** to grow (especially for high-priced vehicles), to achieve a market share in the low single digits.
- While we have less confidence as to **how many dealerships** ("rooftops") there will be in 2025, we project a slow consolidation, from roughly 18,000 today, to perhaps 16,500 or so.
- We are more confident that there will continue to be consolidation in **ownership of stores**, from around 8,000 owners today to perhaps 6,500 by 2025. Private ownership will continue to dominate, with the gainers regional chains, and the losers metro-area single-point stores.
- We expect that, as for **profitability**, income statement ratios will be somewhat lower than they are today, while balance sheet ratios (e.g. ROE) may hold up better. But stronger profits will flow mostly to more aggressive stores: the average store might fall behind.
- And we foresee that the **drivers of store profits** will continue to rapidly evolve. By 2025 the shift from margin to volume will be complete, changes in online technology and in market preferences will ensure the transition away from negotiated prices continues, service will be the primary source of profit growth, OEM payments will become a new "shop" for dealers to manage, control of cost will be more crucial, and other departments (finance & insurance ("F&I"), used, collision) will all be challenged. On the human resource front, these changes will accelerate the trend to transition from salespeople to product advisors, and concurrently with this, a movement away from seeing

front-line personnel as variable-cost, short-term expenses, and toward treating them more as fixed-cost, long-term investments.

- While we do see these *changes* to the dealership business model taking place, **we do not yet see entirely *new* business models emerging** (e.g. dealers as mobility service providers).
- When it comes to **the store itself** in 2025, we expect significant change. As to the **physical store**, we see only a slight increase in BTO (build to order), such that inventory levels will remain high (falling only from 60 to 50 days). We also hope that building costs will by then be relatively lower. As for the **digital** store, dealers will leverage IT to strengthen personal links with customers, but on a lower cost base. But IT will also drive increasing OEM control of the store, cybersecurity risks, and power struggles with both vendors and customers. Where the two stores overlap is in an expected **"death of geography,"** as online sales reach beyond traditional geographical sales territories, again allowing stronger dealers to displace weaker ones.
- Finally, we have tried to project to 2025 what the **regulatory and legal environment** for dealers might look like. Our view is that the regulatory outlook is difficult, but manageable: existing issues dealers can deal with; emergent new issues will probably be resolved over time; and the likelihood of a shift away from the franchise system seems very low, although dealers should remain alert to ongoing challenges to the system.

In terms of specific topic findings (discussed in the lettered chapters):

- We see smaller, **rural dealers** facing different challenges than larger, metro dealers, such as low growth prospects, relatively higher investment burdens, and minimal OEM support. Conversely they have the advantages of geographically-protected markets, strong customer relationships, and lower rates of change to manage. Accordingly, such dealers should consider adopting creative strategies for growing scale, diversifying income streams, and preserving the characteristics of that make them such strong competitors. These steps will be easier to take if OEMs will adjust their policies to become much more flexible and supportive of these stores.
- We spoke with heavy-duty (HD) **truck dealers**, because they face today some of the issues which car dealers will face tomorrow. We learned two key lessons. First, there is "life after margin:" dealers can evolve to thrive despite minimal new-unit profits. And second, key to this is growth in service revenue, such that HD fixed absorption easily can run at 110% or more.
- We asked the experts at ICDP (the International Car Distribution Programme) for insights American dealers might take from **the European experience**. Among these were: decide now if you want to be a consolidator yourself, or to sell out to one; don't panic about company stores, but worry more about growing indirect control by OEMs; and aggressively pursue service work, on cars of any age.
- We turned again to ICDP for insights from **the Chinese market**, which is instructive because it is unburdened by history (and so is more open to innovation). The lessons here for the US include that: it is crucial to command the digital space; again, dealers must not give up on service work on older cars; and good operating skill is more crucial to dealer profitability than simply scale.
- When we turned our attention to four technology topics, we first looked at the outlook for **electric vehicles (EVs)**. We peg their market share at 5% of US retail sales in 2025, a small volume that won't make or break any current dealer (and if the number is higher, dealers will adapt). We do argue, however, that for various reasons it is important for dealers to more actively embrace EVs.
- The second technology field examined was that of **autonomous vehicles (AVs)**, about which there is vast amount of debate. Nevertheless, our projection is that 100% of new-car sales by 2025

will be equipped with high levels of assisted driving features, with 50% of new cars enabled with partial autonomy, and 10% capable of a high percentage of driving in fully autonomous mode. The impact on dealers may very well be positive, both in new-car sales on fixed operations. But see their interaction with mobility services, discussed next.

- Our third technology topic was another controversial one, that of **mobility services** (MS), as exemplified by rideshare. Our view of MS is that, *as currently configured*, they represent only a modest headwind to vehicle sales in 2025. But, *in the case that AVs and MS can be linked together*, they might have a much more negative impact on dealers, particularly if this linkage leads to Americans renouncing car ownership *en masse*, in favor of "eternal rental." In this eventuality sales would definitely fall and new-car margins and all F&I income evaporate (as these cars are bought by fleets rather than by individuals).
- Finally, our fourth technology topic was the **connected car** (CC). Much CC activity does not directly affect the dealership. However, the impact it does have should be generally positive, as CC technology acts to more tightly and seamlessly bind the car to the dealer's service lane.

Table of Contents

The Dealership of Tomorrow: Context of This Report 1

Introduction 1

Scope 1

Disclaimers 1

Methodology 3

Prior Work 3

The Dealership of Tomorrow: 2025 7

Interleaved with the core topic chapters (numbered) are the special topic chapters (lettered).

1. Will we still be selling cars? 7

   A. Rural Futures 9

2. Will dealerships still exist (physically and digitally)? 13

   B. Insights from Truck Dealers 22

3. How many dealerships will there be? 23

   C. Insights from Europe 25

4. Who will own them? 29

   D. Insights from China 33

5. How profitable will they be? 36

   E. Electric Vehicles 38

6. How will they make their money? 42

   F. Autonomous Vehicles 53

7. How will the store change? 58

   G. Mobility Services 68

8. What will the regulatory and legal environment look like? 77

   H. Connected Cars 81

Conclusion: The View To 2025 83

Acknowledgements 84

Sources Consulted 85

The Dealership of Tomorrow: Context of This Report

Introduction

This project was conceived when NADA senior staff (notably Mike Regan and Bert Hulgrave) became concerned that dealer members of NADA were often not as informed as they probably should be, about the various changes that are occurring in the automotive retailing industry in the United States. Understandably focused on the day-to-day realities of managing the complex business that is a modern car dealership, they had little time to think about the longer-term impact of these changes on their stores. This was in part due to information overload: for example, not a day goes by in America recently without an announcement of some new investment in ridesharing. And there was also the problem of hype: some of the more extreme claims about the benefits of driverless cars, for example, seem to place them on the same lofty pedestal with the invention of electric light or the discovery of penicillin, causing skepticism among many. This report, therefore, aims to winnow through the vast mountains of *data* available, in order to within them find the most valuable pieces of *information* (while discarding the most breathless expressions of hype), and to convert the *insights* discovered into *wisdom* a dealer principal can actually use in her or his long-term planning process.

Scope

Below are the parameters that shape this report, so the reader will understand better what to expect.

- TIME: Our focus is on roughly the next decade, so our predictions are for the dealership of 2025.
- BUSINESS: We are looking only at *franchised new-vehicle stores* (not independent used-only shops), and only at *light-duty dealerships* (not heavy-duty truck stores). That being said, we have a chapter discussing lessons learned from truck stores, which may be useful for car stores.
- GEOGRAPHY: Our focus is on the USA only. However, we have chapters on insights from Europe and China, as we realize that we live in a globalized world, where individual countries cannot ignore developments outside their own borders. Because of this geographic focus, readers should *not* extrapolate from our findings to globally-valid conclusions. Thus, for example, the development of rideshare may be wildly different in China versus America.
- FORECAST: We are providing a *single forecast*, not generating a *range of scenarios*. We understand that looking at multiple scenarios has great appeal generally, but we think that this approach is unhelpful to dealers specifically. Dealers already have a very full plate of tasks to be done, such that handing them a set of "it could be this but it might be that" scenarios would just overload that plate. We have chosen instead to focus on one forecast – and then discuss what might cause it to come out differently.
- OUTPUT: In every case we have tried to link our forecast to *specific implications* for dealers, and in some case specific actions they might take. Too many reports we have read in this field deliver unhelpful generalities (e.g. "get closer to the customer"), so we have tried to deliver actionable recommendations (e.g. "open a satellite service facility").

Disclaimers

We have three important disclaimers to make.

1. **While this report was commissioned by NADA, on behalf of its members, this report is not an NADA position paper.** The views and opinions expressed in this report are those of the author's sources, as interpreted by the author, and accordingly in various cases do not align with NADA's own views or perspectives. The goal of the report is to project the most likely future dealers might face – not the future that dealers might want to face. The author attests that NADA personnel, beyond specifying the general scope of the report (e.g. a ten-year time horizon, a focus on car rather than truck dealers, a request to take a close look at the issues facing small rural dealers, etc.), made no substantive changes to any of the content of the report. There were only two exceptions to this general rule of complete editorial independence.

2. First, the author *did* consult NADA attorneys for their review of any comments made on the legal and regulatory environment, as the author is not an attorney, and did not want errors of interpretation of laws or regulations to undermine his arguments in this area.

    - And second, we turned to the experts at ICDP[1] for much of the material in the Europe and China chapters, such that there the author's opinions are subordinate to theirs.
    - ***"Your mileage may vary:" don't take this report as the authoritative answer, but as input to your own forecast, tailored to your store's circumstances. Use your own judgment.*** Our industry has a long track record of forecasts made that have been wide of the mark:
    - A survey of industry participants published in *Automotive News* in 1993 asserted that by now customers would order cars via interactive TV sets, that the physical test drive would be replaced by drives executed in virtual reality, that dealerships would mostly be multi-branded, and that stores would be holding only a few demonstrator models rather than large inventories, because customers would custom-order cars that would be built and delivered within a week.
    - A *Ward's* article in 1990 predicted that by 2003 customers would be viewing 3-D holograms of cars in showrooms, as much as physical cars themselves.
    - A famous industry expert—who will remain nameless—in 1989 forecast that, before the year 2000, OEMs would be fighting for "shelf space" at multibrand car dealers, just as electronics manufacturers do for display space at (e.g.) Best Buy.
    - As shown in a footnote to this report later on, an esteemed OEM leader years ago projected that long before now only 20% of dealerships would still be in private hands.

    The point here is not to mock forecasters from the past (hindsight is after all 20/20), but to remind us all that the future of this industry has never been very easy to see. So take what you read here as input rather than as output, and arrive at your own forecast.

    The author's personal bias is to predict slower rates of change than do most experts. If there is one lesson I have learned from hearing and reading numerous automotive forecasts over the years, it is that: *while change is constant in this industry, it generally does not proceed as quickly as many observers and analysts expect (or hope)*. Dealers set up websites, hybrids make inroads, and aluminum displaces iron in cars – but almost always more slowly than predicted. There is in our industry such an enormous legacy of history, processes, and institutions—the sum total of over

[1] The International Car Distribution Programme

a century of formation and dissolution of OEMs, suppliers, dealers, garages, rules, regulations, inventions, habits, traditions, and more—that rapid change faces massive frictional drag. So you will see in this report, in many cases, agreement with other forecasts of change – but at a slower pace than they project.

Methodology

Our approach has been to synthesize the opinions and views of numerous automotive industry experts, *not* to thrust on the reader the particular perspectives of the author. This is because our subject is so complex that I could not ever hope to have an integrated, deep, and broad view of all the moving parts, from F&I profits to autonomous vehicles' evolution, from new-car margin trends to the potential for electric cars, from insights about dealer human resources to commentary on regulatory developments, and much more. So the forecasts here are in most cases my best estimate of what I think the consensus of informed opinion would come up with. In a few places, where our interviewees and written sources showed no clear consensus, I have inserted my own forecast. But again, readers are encouraged to take into account what is written here, and then come up with their own projections: we hope this report is valuable *input* to your planning process, but it cannot *replace* that process.

In terms of the expertise we sought, we cast the net very wide. We talked to dealers both public and private, in both major markets and small rural communities; we interviewed investors who had purchased dealerships and those who had decided not to; we talked to IT companies and consultants; we spoke with people outside our industry who might have insight for us (e.g. other types of retailers); we spoke to truck dealers, attorneys, vendors to the industry, OEMs, state dealer association executives, and more. We visited in person high-tech dealers in Silicon Valley and small stores in traditional rural locations. And we read reports, written by academics, regulators, industry associations, consultants, journalists, think tanks, and more – roughly 150 in depth, and another 100 or so skimmed. There is no lack of *opinion* on the topics we tackled, though *wisdom* was harder to find. Our hardest task was not the collection of views and data, but the sifting, sorting, and organizing of it all, until we coaxed it into some sort of coherent story which would yield useful insights.

As a result of our very broad sweep of topics, this is a very long and complicated report. The Executive Summary boils it all down, as do the visual presentation versions of the work. But readers should be warned: in many areas (e.g. autonomous vehicles) the combination of multiple issues, colliding with strongly-held opinions, based on very scanty data resulted in a complex story. There are few easy answers or "soundbites" in this document.

Prior Work

Before we dive into the current report, we'll recap what we thought about the Dealership of Tomorrow back in early 2013, when we completed the Factory Facilities Programs (FFP) report. In that work we focused overwhelmingly on facilities issues, specifically on how factory "image" programs might pay off – or more typically, *not* pay off – for dealers investing in them. But one section of that effort looked at the dealership of the future, if only briefly. This was because one could hardly evaluate the Return on Investment (ROI) of building a new store, if one thought stores in the future would be radically different. (For example, the ROI of opening a new bookstore looked a lot worse after Amazon arrived on the scene, than before.) So we did some research, interviewed some people, and came up with some perspectives. It may be helpful to recap the findings here, so readers can see how thinking about the Dealership of Tomorrow has evolved in just

the last few years. (The next three sections are excerpted directly from the FFP report of 2013, so if you're familiar with that work, feel free to skip past them.)

The Past

One way to forecast the future evolution of dealerships is to just look at actual historical facts. If we can see how dealerships have changed since 1950, we might be able to extrapolate that change trajectory to 2025. So let's step back from the future for now, and see how far we have come. We'll choose as an arbitrary start date for this journey the mid-1950s.

How can we characterize the dealership of the 1950s? Well, on the following metrics:

- Number: in 1955 there were some 41,000 new-car stores in the USA…
- Size: selling about 150 new retail units annually, from an inventory of about 40 days of sales…
- Consolidation: under the control of some 35,000+ owners (basically one per store)…
- Brands: handling usually one major OEM (e.g. Ford) but filling in with a few secondary brands…
- Service: with fixed operations contributing about a third of annual profits…
- Location: and the whole thing usually sited on a major downtown street…
- Integration: with new, used, parts, service, and F&I typically all on site…
- Balance of Power: and with the OEM pretty much in charge of the show.[2]

The Present

Now we fast-forward to 2015 or so, about half a century later. What has happened to US dealerships?

- Number: from 41,000 we have shrunken down to about 18,000 dealerships…
- Size: yet with growth in total sales the average store now sells some 650 new units annually; but with the proliferation of models the average days of inventory have risen from 40 to 60…
- Consolidation: and there has been significant shrinkage in the ownership base, with the typical dealer principal owning several stores in a local region (but on the other hand the national chains have not swept the board)…
- Brands: while dualling has been dramatically reduced, as OEMs move to mostly exclusive-to-one-factory stores…
- Service: and fixed operations are contributing even more: about half of annual profits…
- Location: while most stores have moved out from downtown to the suburbs….
- Integration: and some dis-integration has occurred, with only 1 in 5 stores now having an on-site bodyshop, and administrative and other functions are moving off-site as well…
- Balance of Power: while, thanks to the efforts of dealers, state associations, and NADA, the balance of power between OEMs and dealers has become much more even (while consumers, thanks to the rise of the internet, are gaining more power relative to both dealers and factories).

[2] Numerical data are from various Automotive News annual data editions; comments are the author's.

The Future

Taking all this into account, here's the forecast for the dealership of the future, perhaps in the year 2020 or 2025, which we came up with back in 2013. (The symbol ▸ indicates where we are showing a *recommendation*, rather than a *forecast*.)

THE EVOLVING AUTO DEALERSHIP: KEY FEATURES

Characteristic	Past (1955)	Present	Future (2025)
Main Physical Features			
Number of dealers*	41,000	18,000	about the same
Size (annual NVR)	150	650	1,000
Consolidation	None	Nat'l low, local medium	Region mid, local high
Showroom/sales	Glassed-in storefront Inventory ~40 units Salesmen, brochures	Highly brand-customized Inventory ~60 Salespeople, internet	▸Flexible "box" Inventory ~40 "Virtual reality"
Service	1/3 of profits On-site Generic	1/2 of profits Express service emerges Comfortable lounges	Higher share of profits? Satellite, pickup, shuttle, etc. Advanced technology
All other functions	On-site	Body shop (BS) offsite	BS, all admin offsite
Dominant location	Main Street	Suburban auto mile	Diverse locations
Format flexibility	High (change the sign)	Low (raze and rebuild)	▸High (low-cost customization)
Life of format	Indefinite/long	10-15 years (remodel)	≤ 10 years
Other Features			
Brands	From many to one	Store one, group several	Store one, group many
Consolidation	None	Several national chains Many regional groups Numerous local groups Many single-points	National chains – unchanged Reg
Function of store	Dealer (margin)	Retailer (back end money)	"Company store?"[3]

[3]Meaning not a store owned by the OEM, but one owned by the dealer yet controlled in most aspects of operations by the OEM – thus closer to a fast-food franchise than to a fully independent business.

The future **number** of dealers we saw as constant, with the sharp decline in counts now mostly completed. Some OEMs will keep dropping stores, but others will add points, for a net change of roughly zero. Holding the number constant and applying consensus forecasts as to the growth in annual sales over the next decade or so, we saw the average **size** of a store rising to 1,000 new units annually. There seemed to be clear economies of scale for local and regional groups to continue to advance their **consolidation**, typically a half-dozen or so stores in a minor metro area: concentrated enough to be manageable, and big enough to be able to share facilities and staff to bring down costs. While volumes per store will grow, we saw advanced **inventory** management techniques (e.g. dealer swaps, inventory-management software) as enabling turns to accelerate, so that acreage need not increase. The **showroom** itself would (finally) be enhanced by very-high-resolution virtual reality displays, allowing dealers to not have to have every model physically inside at all times, thus shrinking footage.[4] As for the **service** area, we had no one specific forecast, but rather a range of options that dealers can tailor to their local clientele, in order to capture or recapture service volume that otherwise will be lost. We saw these options including satellite service (customer-facing or not), pickup and dropoff services, increased hours up to 24/7, centralized shuttle runs, on-lot touchscreen displays for unattended service dropoff, service facilities shared with other brands, driveway service (both own-brand and AMM[5]), etc., etc. The point is we felt we needed much greater *flexibility* in meeting the needs of the service market, beyond building ever-larger onsite service facilities on very expensive land. If the average dealer cannot in this way claw back service volume, there is no way to financially support the investments in the brand that OEMs are seeking from dealers, as we cannot expect any help from (ever-shrinking) new-car sales margins. All **other functions** we saw as moving offsite, as the typical body shop already has: it is a matter of matching a function's economic value to the appropriate real estate cost, and modern technology allows the unbundling of these functions. In terms of location, changing consumer needs and wants, and the revival of city centers, as well as retail innovations generally, implied to us a greater diversity of dealer locations than the past default template of "follow 'em to the suburbs."

Beyond our forecast for the physical aspects of the dealership industry of the future, the forecast exhibit shows a few other predictions. We did not see multi-branding (i.e. cars from different OEMs) taking hold in the USA in this timeframe. Nor did we see the national chains gaining much more market share – but we do see that local groups' share of the market may very well soar.

More fundamentally, however, we were worried about the role of the dealer him- or herself in this future. In the 1950s the dealer was truly a "dealer:" making money by buying low at wholesale and selling high at retail, living and dying by the margin on the car. Fifty years later the dealer is now really a "retailer:" living and dying not on margin, but on the numerous bonuses, allocations, spiffs, incentives, holdbacks, subventions, and supplementary payments awarded by the factory, for compliance with dozens of metrics, from CSI scores to sales targets to image compliance to tech training and IT implementation. The degrees of freedom open to the dealer – who may not even be allowed now to have the family name on the store – have been and are shrinking. If dealers cannot demonstrate to OEMs their value in customizing people, processes, and store formats to local market needs, by 2025 the dealer may be a company store in all but name: funded by the family's capital, but operated entirely according to an OEM's rulebook. Dealers would still exist in this future, protected by, among other things, decades of tradition and customer

[4] And we strongly recommended that OEMs follow our suggestion to allow brand customization in the sales area through static (graphics and photos) and dynamic (imaging, projections, lighting) displays, which can be changed frequently and at low cost, rather than continuing on the current path of ripping up and redoing tiles, carpets, fixtures, furniture, and architecture (walls, balconies, facades, entries) to update brand support, which is both extremely disruptive to business and needlessly expensive.

[5] All Makes and Models

loyalty – but they may not like this future very much, as they become less like entrepreneurs and more like corporate managers.

That was our view in 2013. Now let's return to the current project, and see what we've changed or updated in our forecast, as well as what we have kept the same.

The Dealership of Tomorrow: 2025

Our story about the outlook for 2025 follows a sort of funnel, starting with very broad and general topics, and then getting more focused and specific as we go along. So let's begin with the broadest question possible:

1. Will we still be selling cars?

The obvious answer to this is "of course!" But we lead off with it to illustrate that there are more than a few pundits who expect that the advent of autonomous vehicles (AV), and of mobility service (MS) companies like Uber, will combine to slash new car sales. Their thinking is that few rational consumers will choose to buy their own cars, if they have on-demand access to low-cost vehicles (whose low cost will be the result of replacing human drivers with software and sensors). We take a look at various predictions related to both of these developments in separate chapters elsewhere in this report, but—to cut to the chase – we believe that their net impact on new car sales *volumes* will be minimal in 2025 (although it will be growing, and the impact on *profits* could well be greater). There will be negative effects (if people share cars there is *less* demand for cars overall) but also positive effects (if a self-driving vehicle lets senior citizens who have lost their driver's licenses get back on the road, there will be *more* demand for cars). These effects are almost impossible to forecast out for a decade, but in our view they will have modest impact on new car sales volumes by then.

This conclusion leaves us to base our 2025 USA new-car sales volume prediction on more traditional inputs (such as population and income growth, number of drivers on the road, etc.). Not a lot of forecasters look that far ahead, but we can point to two who have tried:

- IHS uses a fairly straightforward approach, looking at GDP, population, and other factors, and comes up with **17.3 million sales in 2025**, essentially unchanged from 2015's 17.5. Their forecast implies a declining number of cars demanded per capita, since the Census Bureau predicts an 8% growth in population by then (half from natural increase and half from immigration). This makes sense, as the American market is fairly saturated: as Experian points out, the average American household already has c. 2.1 cars and light trucks (260 mm vehicles and 125 mm households). Put another way, we have 1.2 vehicles for every licensed driver in the USA (215 million), so we can't even drive what we have now – at least, not all at the same time![6]

[6] See periodic IHS Automotive forecasts by IHS Markit, US Census Bureau projections, and periodic Automotive Quarterly Briefing decks from Experian Information Solutions.

- The Michigan-based Center for Automotive Research (CAR) took a somewhat different approach and came up with a baseline **SAAR for 2025 of 17.9 million**, a bit above today's rate. CAR tried to explicitly address price changes, since obviously as car prices rise (adjusted for inflation), demand should fall – and most analysts and OEMs expect car prices to continue to meet or exceed inflation, as we add more content to vehicles. Some of this content is unregulated (e.g. more speakers for the sound system), but much is regulated (e.g. more hybridized powertrains, to meet tightening MPG and GHG[7] regulations). This kind of forecasting is very difficult to do, because content-driven price increases cut both ways. For example, if I have to spend $2,000 more on a car because it has higher mandated MPG (persuading me to *hold off* buying), I will also save money on the gas I don't have to burn (inducing me to *accelerate* my purchase). But in CAR's model a 10% increase in the inflation-adjusted net price of cars (netted across costs and benefits), which is not unreasonable, could knock 2.5 million units off SAAR in 2025.[8] So we will all have to keep an eye on vehicle costs.

We won't pretend to have better automotive sales forecasting skills than IHS and CAR, so we'll use as our baseline forecast the average of the two, or 17.6, which is just about where we are now.[9]

One more comment on the SAAR in 2025: it is very likely to be skewed to the richer end of the product mix, and to richer customers, than it is today. This is because with every year car quality gets better, and so used cars last longer and longer: in 1975 the average age of the light-vehicle fleet was about 5.5 years, and today it is around 11, just about twice as long.[10] With more and more used cars on the road, of higher and higher reliability, they become better deals relative to new cars. The era when a person bought a used car because she just couldn't afford a new one is over: today the used car is, in terms of pure economics, usually a very sensible option. So cars have become more like houses: the wealthy (on average) buy new houses, and the less-wealthy (on average) buy used ones.[11] As evidence on this point, note that the average transaction price of new vehicles has slightly outpaced overall CPI (Consumer Price Index) inflation ever since the Great Recession.

We can see this shift already taking place: in 1973, for example, when we sold 14 mm new light vehicles, our population was 211 million, versus 17.5 mm in sales and 320 mm in population in 2015. So in 1973 one in 15 Americans bought a new car, but in 2015 only one in 18, a fraction which we can assume comprises customers of higher incomes. This move of the market to the wealthier segment of the population hasn't gone unnoticed by OEMs: note the "democratization of luxury" initiatives by companies like Mercedes, as they produce more (relatively) down-market models like the CLA and GLA. **Dealers should therefore expect to steadily upgrade processes, people, and facilities over the next decade, to meet the more exacting demands of an ever-wealthier customer base.**

[7] GreenHouse Gasses, e.g. carbon dioxide
[8] "The U.S. Automotive Market and Industry in 2025," from CAR, Ann Arbor, Michigan.
[9] One reason to like this 17.6 number is that it adheres to the famous Persistence Method of Forecasting, from meteorology: "The best predictor of the weather for any particular tomorrow is today's weather." Believe it or not, this method has a very good track record. Weathermen hate to acknowledge this, for the obvious reason.
[10] See various fleet data press releases over the years, from R. L. Polk.
[11] If the car/house analogy seems far-fetched, note that the median age of a single-family home in the USA is only 35 years, according to the most recent American Housing Survey (sponsored by the Department of Housing and Urban Development (HUD) and conducted by the U.S. Census Bureau).

SPECIAL TOPIC
Chapter A: Rural Futures

Throughout this report we'll be talking about some generic "average" dealership, maybe a mid-sized suburban facility—and our findings broadly apply to this store. However, there is another category of store which requires special, separate treatment, because of its different circumstances, and this is the small rural store, typically family-owned. These smaller stores make up a significant portion of NADA membership: about 40% of the Association's membership retail 300 or fewer new vehicles each year. And they *do* deserve separate treatment, because the circumstances they face are different. We know this in part from looking at other retailing sectors: we don't see massive Walmarts in midtown Manhattan, and we don't see Starbuck's in remote farming communities: different markets require different retailing approaches.

Accordingly, in researching this report we paid special attention to the situation facing smaller stores, and put on more than a few miles driving in lesser-populated states, in order to see first-hand the environment these stores face. We'll divide our findings about smaller rural stores into three sections: their *situation*, their *challenges*, and their possible 2025 *future* (and how they might best adapt to it).

The Rural Situation

First and foremost, on average (mashing together thousands of very different small towns, north and south, east and west), the markets these dealers serve are not growing. Forecasts of rural population in the USA are hard to come by, but one of the most widely-accepted is from the UN's World Urbanization Prospects project. Its most recent forecast estimates America's rural population to decline from about 60 million recently (out of a total of about 325) to about 58 million (out of total of about 350) by 2025. This is by no means a collapse, but it is clear there is no growth in this overall market, which drops from 18.5% of the American population total to 16.5%.[12]

Second, these stores face a unique competitive environment, one with limited foreign participation. The dealership networks of the companies that over time ended up as the Detroit Three (GM, Ford, FCA) were established when the USA was a much more rural country: as recently as 1950 our population was over 35% rural. Accordingly, the 50,000 or so stores of that time were scattered across most of the small towns of America. When the international OEMs began to arrive (in limited numbers in the 1950s and 60s, and in earnest after the oil crises of the 1970s), they faced an increasingly suburbanizing country, and so went were the customers were – to the metro areas, especially to the suburbs. Accordingly, for many small rural dealers the competition is limited to the domestic brands.[13]

Third, these stores face a different sort of customer as well. Rural buyers skew heavily towards SUVs and pickups, of course, given the dominance of farming, ranching, and other outdoor businesses in these areas. This preference further reinforces the dominance of the Detroit Three brands, as international OEMs have not yet been able to become as highly competitive in trucks. And by the very nature of small towns, dealers and their customers tend to know each other pretty well, and to very highly value personal service and

[12] See "2014 Revision of World Urbanization Prospects," at http://bit.ly/2cEjsTj

[13] This is not entirely true of course, especially for small rural dealers located within "striking distance" of larger towns. In connection with this, rural dealers made an interesting point about the role of the internet, and how it levels the playing field somewhat. As one put it: "It is true that a nearby city dealer can 'poach' my customers more easily now, when they go online to shop for cars, but then again, I can do the same in reverse. The trouble is, the field still tilts their way: a city shopper will come to my small town only for the car deal, whereas my local people have multiple reasons to head to the big city."

connection. This kind of personal relationship is reinforced by a related characteristic of these stores: they are overwhelmingly family-owned.[14] Therefore, rural dealers told us that, while online shopping of course is affecting them as well as their big-city brothers and sisters, the pace of change is not as swift, and customer loyalty stronger is than it is elsewhere. They also saw little threat (or opportunity for that matter) from autonomous vehicles, mobility services, or even electric vehicles (EVs). As one dealer joked with us: "The concept of one of my rancher customer ride-sharing his beloved F350 Dually with anybody waving a smartphone at him, is entirely beyond belief!"

Adding these factors all up, and it is clear that the rural small store faces a different situation than the typical larger suburban store – and also that the rate at which that situation is changing is slower.

Rural Challenges

Against this backdrop, we can see how the rural store faces a combination of challenges and opportunities.

First, although they are smaller than the average store, they are not necessarily less profitable: small size is not a predictor of low (relative) *profitability*. That is, if we look at net income as a percentage of revenues, averaged across dealers of all sizes, we don't see a strong correlation: small rural stores, who often face lower costs than suburban stores (for land, labor, and other factors), can keep up with larger stores in terms of profit margin. Thus on this basis alone we would not expect small rural stores to suffer much.

Yet, secondly, small size does mean lower (absolute) *profits*. A store with half the revenue of a larger one, even with the same profit margin, will obviously generate lower total dollar profits. And this is a huge problem for these stores, which cannot easily amass the total dollars needed to cover the increasingly higher investments required (or requested) by their OEMs (for bigger and more lavish facilities, for updated IT systems, for incentive-program enrollment fees, for special service tools, etc. etc.) or by ever-tightening regulations.[15] When small rural dealers discuss leaving the business, this problem is the one that comes up over and over.

Thirdly, with rural markets on average not growing, the local dealership cannot readily compete its way out of this upward-ratcheting investment burden: in a growing market every dealer can gain sales, but in a flat market every sale won by one store is lost by another.[16]

Fourthly, with ownership being primarily private, all these stores face – sooner or later – succession issues, which make the challenges listed so far even more pressing. As several dealers expressed to us: "My family built this store up over decades, and we've always invested in it, but I can't ask myself and my heirs to bet our family's capital again and again: the table stakes just keep growing!" The current owner may be up to

[14] Public chains (and even the larger private chains) tend to avoid purchasing small rural stores for a variety of reasons. First, they are relatively expensive. (If due diligence in acquiring a store costs $250,000 (a not unreasonable number), it's more efficient to spend that on a store with sales of $25 million, than on one pulling down $10 million. The cost of acquisition doesn't drop much as stores get smaller.) Second, it is hard to "put enough money to work" here: there just aren't many investment firms that want to buy things this small. (If a typical private equity fund raises a few hundred million bucks, it would take a great number of small-dealer deals to get the fund fully invested.) And third, our interviewees suggested that in these cases it is hard to get good talent. Turning these stores around (and that is the point, of course, to buy them in order to improve their profitability) requires a star general manager, and these people cost money, so buyers prefer to leverage them on bigger opportunities.

[15] As one smaller dealer put it: "I could never afford to hire the compliance officer I probably should have on hand, just to keep up with all this stuff!" Of course, there are other resources for handling this problem, from state dealer associations' training programs, to commercial compliance solutions such as those from Ethos Group.

[16] It is important here to bring geography back into the picture. Not all rural markets are flat. As one industry expert put it to us, "It is not simply a matter of being in too small a place, it is a matter of being in the wrong place as well: many southern and western rural communities are growing just as fast as many northern communities are shrinking." Again, we are speaking of averages here, and averages hide a world of variation!

all these challenges, but she has to ask herself if children are, or if they should be put in the position of having to take them on.

And finally, small rural dealers complained with unique vehemence to us about the lack of OEM understanding of and support for their special situation. True, all dealers have some sort of love/hate relationship with the factory, which is only natural given that factory's and the dealer's goals will never perfectly align. But the refrain of factory indifference at best—and hostility at worst—was very clear when we spoke to small rural dealerships.

It is completely nonsensical, in our view, for OEMs to ever take an indifferent or hostile attitude toward small rural stores. These stores tend to have highly committed owners, with a lot of "skin in the game." They know their local markets well. They typically have high local market shares and good customer relations. They form the one market type where relentless foreign competition is less severe. They incur low OEM support costs.[17] On the other hand, it is true, small rural dealers tend to be further out of compliance with OEM standards (for facilities and any number of other requirements): of course it must annoy an OEM to see its store wedged into the same building with an all makes and models (AMM) parts store or body shop, or to realize the dealer is making more money from his boat and ATV store than from cars and trucks. But in our view, despite these issues, on average these stores represent assets rather than liabilities for OEMs, and should be treated as such. We do not see why a more positive attitude cannot be taken (see Rural Outlook below): as one very senior executive of one very large public chain told us: "If the OEMs were smart they would keep every one of these rural stores, as they are a competitive advantage for the Detroit factories. It is in the metro areas where over-dealering is a problem, not in the countryside."

In summary, the challenges of small rural stores (above and beyond those facing all dealers everywhere), are all about dealing with heavy investment burdens in a no-growth environment, with difficult family considerations to take into account, and without much OEM support.

[17] **This author rejects OEM assertions to the contrary.** Calculations of the "structural and administrative cost savings" of removing smaller dealerships from their networks, provided by GM and then-Chrysler to the US government during these companies' bankruptcy filings, leave me unpersuaded. The fact that the companies included in dealership-support costs items such as transport (which are charged back to dealers anyway); the fact that they included costs that are proportionate to unit volumes, not to outlet count (such as advertising); the fact they could not agree between the two of them as to what costs to include in the calculations; and the fact that their estimates varied by a factor of almost 4x, all combine to completely undermine their assertions of high per-dealer support costs (exhibit). My guesstimate (and it is only that) is that the net cost to an OEM of keeping a rural point open is probably $25,000 annually or less – and with the OEMs' tendency to charge dealers for more and more of the support offered, it may be much less. As more than one dealer told us: "Warranty audits have gone from being an expense for the factory, to a profit center!"

OEM Representation of Dealer Support Costs

Table 7—Estimated Structural/Administrative Cost Savings

	GM[a]		Chrysler[b]	
Category of Savings Estimate	**Per dealership**	**Total**	**Per dealership**	**Total**
Local Advertising	86,957	200,000,000	0	0
Dealer Channel Network Alignment	54,347	125,000,000	0	0
Sales and Service Consultants/Field Staff	17,391	40,000,000	3,802	3,000,000
Dealer Website/IT Expenses	17,391	40,000,000	4,183	3,300,000
Training	4,348	10,000,000	6,337	5,000,000
Corporate Administration	0	0	18,504	14,600,000
Transportation	0	0	10,139	8,000,000
Other	0	0	2,535	2,000,000
Total Savings		**$415,000,000**		**$35,900,000**
Savings Per Dealership		**$180,434**		**$45,500**

[a] GM's total is based on a reduction of 2,300 dealerships
[b] Chrysler's total is based on a reduction of 789 dealerships
Source: SIGTARP analysis of data provided by GM and Chrysler

Source: SIGTARP, Factors Affecting the Decisions of General Motors and Chrysler to Reduce Their Dealership Networks, July 2010

Rural Outlook

Taking all this into account, what should small rural dealers do?

First of all, of course they could just throw in the towel and *exit*. Our interviewees were very divided on this point. Some were absolutely certain that rural stores would close at high rates over the next decade, especially during a recession, as they were "too small to survive." Others were much more appreciative of the staying power of the small rural store: "These guys have deep local roots, they paid the land off decades ago, they know all their customers, the store employs most of their family, they are some of the few small-town business people left standing, the service business will always be there—and they have seen it all and they are tough: I don't expect many of them to quit." Perhaps for most the deciding factor will be the succession issue. But as a result of these divided opinions, we have no forecast for rural dealer counts in 2025: there are clear arguments for both staying and going.

Secondly, given growing investment requirements, rural small dealers probably do need to *build scale*. And if new sales aren't growing, then picking up more service market share is the place to focus, by pulling share from independent service outlets. That means competitive oil changes, sales of tires, extended hours and express lanes, probably satellite service (rural customers need distributed service even more than do metro-area consumers), and more. As one dealer told us, "Let's face it, though I hate to say it: in the future my store is going to be 'service in front, sales in back.'" And of course, there is consolidation: increasingly we see small towns where all three domestic stores are owned by the same dealer principal.

Third, if the rural store cannot grow its core businesses, the only other option for boosting profits is to *diversify*. And in our travels we saw an almost limitless variety of diversifying moves undertaken by inventive small rural dealers. We saw apparel stores ("If my customers are cowboys I can sell them cowboy hats as well as pickup trucks"), RV service bays, ATV dealerships, BHPH[18] lots, separate parts stores, AMM body shops (on site or off), AMM service shops, and more. OEMs may not like this activity, but they cannot argue that a dealer who cannot earn a living selling their cars, should not try other lines of business in order to restore his livelihood.

And finally, building on our earlier points, we think a *change in attitude among OEMs* is needed, as regards small rural stores: from *indifference because they are small, to appreciation because they are special*. In the current environment, OEM burdens on small rural stores act to erase the very characteristics that make these stores strongly competitive in their market areas. Lower-cost facility guidelines would reassure frugal rural customers that the dealer is not exploiting them. Looser facility guidelines would let stores adapt to rural communities' proud sense of local pride, whether that means Western décor in Wyoming or Little League trophy cases anywhere. Sales volume incentive programs that reflect small-store realities would restore the trust levels so important to local communities.[19] Flexibility in requirements less visible to the customer can reduce costs and so allow dealers to invest in things the customer can see: thus OEMs should be more open to shared service or used-car facilities, even if they remain insistent on separated new-car showrooms. And finally, an OEM should reconsider lifting barriers to the local dealer owning a rival brand's store as well (to the extent it imposes such barriers), as in many cases the alternative is to have no representation in the market at all!

[18] Buy Here Pay Here (where the dealership carries the financing on the vehicles it sells).

[19] At low unit sales volumes, even small disruptions in supply or demand (late arrival of a car carrier, start of a local county fair, etc.) cause gyrations in a small store's ability to hit sales targets, which a larger store can easily average out and shake off. And in smaller communities where "everyone knows everyone else," the resulting fluctuations in the local dealer's best-offer prices (caused by aggressive "stair step" incentive programs) can erode the trust that that dealer depends on. In a large metro area the customer upset by this behavior can move on to the next same-brand dealer; in a rural area with fewer same-brand dealers, he may very likely switch brands.

In summary, therefore, our view is that the small rural dealer does face a different environment than larger metro stores, that the challenges he or she faces are therefore also different, and so the steps dealers—and their factories—should take, on the road ahead to 2025, involve creative and flexible strategies for growing scale, for diversifying income streams, and for preserving the characteristics of these stores that make them such strong competitive assets for the (mostly) domestic OEMs they are partnered with. All of these steps will be much easier to take if OEMs will adjust their policies to become more supportive of the small rural store.

2. Will dealerships still exist?

In Chapter 1 we asserted that cars are still being sold in 2025. The next question is therefore, will they be sold by dealerships, defined as *physically existing independently-owned franchises*? Let's break that down into two subordinate questions: will cars be sold in *physical* stores staffed by humans (perhaps with a large online component, of course, but not *purely* online), and will these stores be *owned by dealers* (franchised sales[20]) or by car companies (direct sales)?

Will cars still be sold in physical locations?

Our interviewees (not just dealers but *everyone* we spoke with) were pretty unanimous about this, that the great majority of cars would be transacted at or by a physical store, even if there was an enormous online component to the processes of shopping, negotiating, configuring, selecting, and financing the vehicle. There might be at-home delivery, there might be a test drive conducted elsewhere than at the store, but still the great majority of vehicles would require a physical store. The reasons for this, to use a common phrase, "will always be the same:"

- The **customer** would still want to be able to see, talk to, work with and – if necessary – complain to a person in person, rather than via an app or a call to a customer service rep. Cox research confirmed that about 85% of shoppers want to buy in person, and about 90% would not buy a car without a test drive.[21] (And of course a physical presence is completely unavoidable for servicing the car.) The deal is still too complex, the car too expensive, the variety of colors and features too overwhelming, to leave all this to the internet – for the vast majority of customers. Even for those customers who didn't need the traditional test *drive* there was an emerging need for the test "*boot*" as it were, in which all the advanced electronics features of the car could be reviewed with the customer. Of course, for a sliver of the population, perhaps 5%, who value their personal time in the hundreds of dollars per hour (imagine a start-up CEO or a busy surgeon), a more streamlined "point, click, and drop off" process might be preferred.[22] But it is important to recall that *this segment has always existed*, and has always been served, either by dealers themselves

[20] In this report we will default to calling independently-owned dealers franchises, as they are now in the USA. However, there is another model for independently-owned dealers, known as "agency," where the dealer does not take ownership of the product, and only acts to sell cars on behalf of the OEM, for a fixed fee. Older readers may recall that Porsche proposed this kind of arrangement in 1984 in the USA, but that it was generally rejected by dealers. Given how low new-car margins are today, and how expensive inventory is, perhaps some dealers would like to revisit the concept? It is already effectively in place for most fleet sales.

[21] A survey of car shoppers by the Union of Concerned Scientists (focused on alt-fuel vehicles) incidentally confirmed the Cox data: they found about 85% of California buyers would not buy a car without a test drive. (Electric Vehicle Survey Methodology and Assumptions, UCS, May 2016).

[22] Opinion remains divided on the long-term popularity of home delivery. It has the benefit of being convenient for the customer, but it has the drawback of potentially (inadvertently) pressuring the customer. When at the dealership, a frustrated customer can always just walk away. But when the car is coming off the flatbed in your driveway, and the dealer's rep is holding out the tablet computer for you to sign, and something is wrong ("It didn't look that shade of green online!")—the customer can feel cornered.

or by brokers. (Even if those brokers who have moved online have rebranded themselves as tech companies, they remain – at core – brokers.[23])

- The **OEMs** we spoke with also preferred a physical point to exist, in the great majority of cases. We can verify that this is the case beyond just the OEMs we sampled, since virtually everywhere around the world OEMs have opted for physical sales points: this is *not* just an artifact of the American system. (There are minor exceptions, such as European factory-pick-up programs for premium buyers.) Their reasons were the same as the customer's: e.g. if the customer wants a test drive, or to talk to a person in person, or see the service bays, then the OEM needs to find a way to give these things to them.
- The **dealer** still wants to see the customer: personal interaction can be the deciding factor as to whether to approve the financing, over-allow on the trade, or offer the last $100 off to make the deal. *And ironically, it is in part dealers' adoption of on-line tools and more customer-friendly selling that make it easier for their physical stores to continue to exist.* Ten years ago, if the in-store experience was indeed pretty unattractive on average, a customer might see the appeal in an online "disintermediator"[24] such as the original incarnation of CarsDirect. But over time dealers have adopted these firms' methods and tools, and now can offer customers the best of both worlds: if you want to come into the store, that's fine, but if you want to enjoy the look and feel of an online application, then the dealer's website is often up to the challenge, especially if it works with a service (e.g. Roadster or MakeMyDeal) which can bolt directly onto the dealer's IT. In short, the use of online tools can make the offline store more likely to survive. The popular press may still assume the public wants to avoid dealers, but surveys of the public itself doesn't reveal this antipathy (especially if one asks younger shoppers, as we show below).

Analogy: The Strange Case of the Disappearing Teller … Who Didn't.

As an example of this surprising phenomenon, *whereby more use of technology can actually supplement rather than replace personal interaction and physical facilities*, look at the history of ATMs and tellers in the USA. ATMs (automated teller machines) were first marketed as cost-saving devices, by which banks could eliminate human tellers, which they were widely expected to do. In reality what the ATMs did was free up tellers from low-value tasks such as dispensing cash, so that they could focus on higher-value tasks such as loan servicing. Thus we see no particular decline in teller employment in the USA, even as ATM penetration soared (exhibit[25]). In a similar way technology is freeing up dealer personnel from low-value tasks such as filling in forms, so that they can work on more important tasks, such as setting up a swap with another dealer to get a customer a particular car.

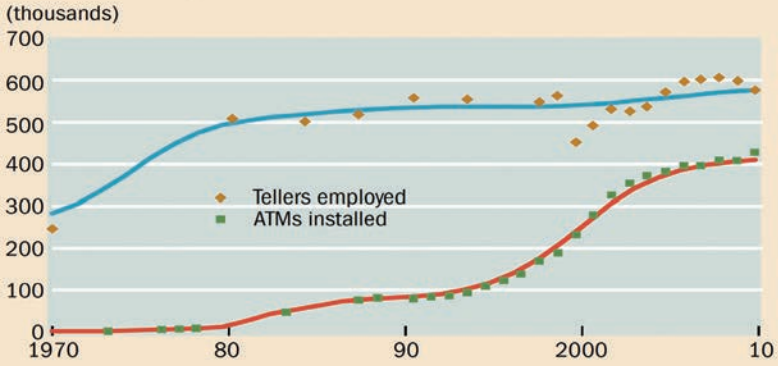
[23] It was fascinating that, when we traveled to Silicon Valley to interview dealers who might be considered the most cutting-edge of all, serving as they did the tech sector, even they unanimously expected the physical store to continue: as one put it, "The algorithm cannot do it all, people are crucial still."

[24] "Disintermediator" is in quotes because these "cut out the dealer" websites actually did no such thing, as they sourced cars from dealers themselves: these firms are again perhaps better called brokers.

[25] From "Toil and Technology, "by James Bessen, Finance & Development, March 2015

Where Did the Tellers (Not) Go?

As more ATMs were installed in the United States, the number of tellers employed did not drop.



Sources: Ruggles and others, Integrated Public Use Microdata Series: Version 5.0; Bureau of Labor Statistics, Occupational Employment Survey; and Bank for International Settlements, Committee on Payment and Settlement Systems, various publications.

But there is a broader argument for a physical store that these customer, OEM, and dealer arguments don't directly address, and that is about cost. It is not at all clear that a storeless system is inherently lower in cost than a store system: costs are not so much reduced when the store is dismantled, as moved around. Cars are costlier to deliver one-by-one to homes than in batches to a dealership (where *the customer does the work of taking the vehicle home, for free*). Cars still need to be prepped for delivery. Trade-ins need to be examined and accepted (though online tools make remote appraisals easier every day). Inventories need to be held (see the BTO discussion below). Certainly there is enormous room to take costs out of the physical store (e.g. moving inventory from high- to low-cost real estate), but it is not that those costs just go away with a storeless car retailing system. This is because other storeless revolutions (e.g. replacing a record store with MP3 downloads, or a bookstore with ebook readers) fundamentally changed the way the product was delivered: with cars this does not happen. To illustrate, if the car delivered to your driveway by an Amazon drone isn't quite right, the customer can't just slap a UPS return label on it and have it go away.

And here are a few final comments on the persistence of physical stores, from our research:

- First, if you believe that sales will shift more to fleet from retail, perhaps as rideshare gains ground and thus a dealer is selling more to Lyft than to Jane Doe, then physical service facilities become even *more* crucial. If a retail customer has to wait a day for her car's repair, she might be upset; if a fleet has to wait, it has just lost a day's revenue. And it is my opinion that a fleet will not be happy with answers like "Just take the car to any garage to fix, and send us the bill."
- Second, of course this situation will not necessarily last forever. OEMs will keep experimenting with "virtual" systems: note that Hyundai in Canada is launching a pilot whereby Genesis vehicles will be transacted directly between the customer and Hyundai. (But even there, the local

dealer is the delivery point.[26]) And we cannot rule out a "wild card" play: Amazon, for example, might have enough ambition, funds, and skill to offer to an OEM (possibly a struggling one) a direct-delivery option.

- Finally, from this perspective there is an odd silver lining to the collapse in new-car margins (see the profitability chapter): *there is no longer enough margin in the new car to make the system worthwhile for a store-less disruptor*. Years ago, if there were $3,000 gross in a car, perhaps an online player might be able to afford to set up a low-cost separate delivery system, even while handing the customer a discount. But today, with margins hammered down, as one dealer put said to us, it is not worth the attempt: "Go ahead and try: there's not enough money in the new car business for a disruptor to try to take!"

In summary, in 2025 we see the physical store still existing, even if much of its activity is online, even if it is making home deliveries, and even if its format may be radically altered (see the section on changes to the physical store)**.**

Will cars still be sold by dealers, or by car companies directly to consumers?

So we will still have stores. The question now is, who owns them, the factory or an independent dealer (whether an individual, or a private or public company)?

Before we dive into this question, let's agree on three ground rules. First, for now we are setting aside all legal and regulatory matters – let's just look at the dealer/direct issue as if none of these laws existed (we'll bring these back in the regulatory environment chapter). Second, for now we are also setting aside any political commentary regarding Tesla, and only looking at them as an example of a factory-direct system. And third, given how sensitive this discussion is, please be assured once again that the opinions expressed below are not necessarily those of NADA or of any state dealer association, but are only those of the author, based on field interviews and research.

Generally speaking, our interviewees (dealers, investors, factories, etc.) believed that the dealer system would continue through 2025, for the great majority of cars retailed, with factory-direct systems only making some inroads in niche applications.[27]

(Further, many interviewees believed in convergence: as an OEM's factory-direct system grows, management would find it more cost effective to begin enlisting dealers to help carry the burden of field staff, inventory, and facilities; and if these systems do gain ground, traditional OEMs and dealers would find a way to alter their own stores to take on the most popular features of the factory outlets. A new equilibrium would then emerge, where both systems would co-exist. As an example of this that is already

[26] In Canada, "we will focus solely on Genesis at Home, which is concierge sales," says Michael Ricciuto, director of the Genesis brand and corporate strategy. 'We bring the car to you. We'll have Genesis at Home online purchase and Genesis at Home service.' Genesis Motors Canada (GMC) will own the inventory and the dealers will conduct transactions on the OEM's behalf. They will bring a vehicle to the customer, who will purchase through GMC. Dealers will be compensated on each sale. Initially, about a dozen Hyundai dealers will participate; ultimately, by the time a network of Genesis stores is established, Ricciuto is aiming for 33. Meanwhile, Genesis at Home will be complemented by boutique sales locations in select malls and downtown locations. 'It's like a hybrid between leveraging our current dealer body and having a program where the OEM sells direct,' Ricciuto says." From "The book on Genesis: How Hyundai plans to sell a luxury brand," by Jeremy Sinek Aug. 18, 2016, The Globe and Mail, August 18, 2016.

[27] Of course we are aware that there are already factory-owned stores in a handful of high-cost locations where no independent dealer could be persuaded to invest, such as in Manhattan. Thus there are BMW + Mini adjacent stores on West 57th (rumored to have cost $60 million), an Audi + VW facility on West 56th ($125 million?), a Mercedes store on West 53rd ($220 million?), and other similar flagship properties.

visible, note that McDonalds operates a mixed model wherein it owns 15% of its stores, and for the remaining 85% uses franchisees. I doubt few customers can tell one type of store from the other.)

Why would most of our interviewees have such strong faith in the dealership system? There were several key reasons:

- First, OEMs have shown no particular **ability** to run retail stores. As one person put it, "Running 5,000 outlets with 100 employees each is a lot different than running 100 factories with 5,000 employees each." Past efforts by OEMs to "go direct" in the USA have flopped: indeed a century ago factories gave up company stores and agencies in order to hand independent dealers the inventory buffer burden that the OEMs did not want to finance.[28] And this is a *global* phenomenon, since across the world factories use dealers rather than direct systems. Where factory stores do exist, as in Germany, they have almost always underperformed independent dealers, in terms of cost control, labor productivity, and customer satisfaction (see our Insights From Europe section).[29]
- Second, there are very good **economic** reasons to prefer the franchise model for cars. There is the matter of the incentives being stronger: if a dealer does a great job she captures all of the economic upside (via store profits), whereas the manager of a company store would typically only get a bonus and a promotion. (And conversely, if the store starts to fail, the franchisee's personal wealth suffers, whereas the company manager just moves on.) And a dealer, who has his own long-term capital in the game, will run the store for long-term value creation, whereas a manager would be incentivized to boost profits by any means necessary, and then get promoted away before things go south. Or take recall repairs: for an OEM this is a *cost* center (which hardly motivates the company to do anything more than minimally comply), whereas for a dealer this is a *profit* center (which motivates the dealer to get noncompliant cars off the road as fast as possible). Further, when a factory owns a store there is no dealer in place pushing back against bad behavior: thus ICDP sees in Europe factory stores tending to be placed in uneconomic (expensive) locations, or stuffed with unwanted inventory, or underperforming on both the revenue (used car) and cost (labor) dimensions. There is plenty of good economic research available backing up these points, whereas I have not seen any published work demonstrating how or why company stores are economically superior to independent dealerships, in a real-world (as opposed to theoretical) setting.[30]
- Third, for anyone other than a new entrant, the **burden** of moving from a dealership system to a factory-direct network would be massive and crippling. The tab for buying up thousands of acres of real estate, millions of square feet of buildings, and billions of dollars of inventory would be massive for any OEM.[31] Then there would be outcry from customers, as they found they could no longer negotiate price among independent dealers, but had to accept "take it or leave it" company

[28] There were other motivations of course: for example, OEMs are particularly bad at remarketing trade-ins not of their own brand, as touting the advantages of rival makes is certainly not something they are interested in.

[29] It is true that CarMax has shown that a network of car stores can be run from a centralized headquarters. But we see CarMax (a company we greatly admire) as the exception rather than the rule. It has been able to pull this off only after a decade of growing pains, including spending over $100 million on IT over the years, and by focusing entirely on used cars. No one else has been able to emulate them (yet: see Echo Park and others, just getting started), and so we don't see an OEM going even further, and taking on a full new, used, and service enterprise.

[30] See for example various research papers by Benito Arrunada of the Universitat Pompeu Fabra and the Barcelona Graduate School of Economics, at www.arrunada.org

[31] As an aside, one dealer commented: "Do you think any OEM in its right mind would want to take on the Takata recall, which is sweeping not only through its own cars at its own dealerships, but through the other-brand used cars they are handling?"

store prices. (Those readers who believe that Americans overwhelmingly prefer not to negotiate price are directed to recent Cox research on this point.[32])

- Fourth, despite media coverage to the contrary, **customers seem pretty content** with the dealership system. Numerous surveys back this assertion up:
  - Back in 2007 *Consumer Reports* (not a publication that could be considered biased in favor of dealers) revealed in its survey of car buyers that almost 60% were "very satisfied" with their buying experience, and another 30% "somewhat satisfied."[33]
  - Similarly, J. D. Power's 2015 US Sales Satisfaction study, which surveyed tens of thousands of customers, found that 80% rate their overall new-vehicle purchase experience at the dealership as "truly exceptional" or "outstanding,"
  - And in January 2016, *Car & Driver*'s survey of thousands of customers found a similar 80% of them as "very satisfied" or "extremely satisfied" with their dealership experience.

  And of course, dealers are constantly upgrading their processes and people. Thus we find that younger visitors to dealerships are among the most satisfied with the dealer system: a recent Deloitte survey found that millennials were twice as likely to have a positive image of dealers as did older generations (and millennials were also more likely to assert that salespeople treated them fairly and with respect.[34]) Thus it seems probable that some of the loudest critics of the dealership system are basing their critique on outdated stereotypes, which are not supported by actually speaking with present-day customers about their real experiences.

  While there is *no doubt* that there is room for improvement on this front, there is also in our view *no doubt* that the reality of the dealer experience is better than its stereotyped perception … which is steadily catching up. (This is an example of the infamous "Senator Effect," wherein any American can assert that "all politicians are crooks," while simultaneously stating that "*my* Senator is of course an exception.")

  Finally, we have to point out that there is of course no magical law of nature that ensures that service at a company-owned store is inherently better than at a franchise: we would hold out as an example of the contrary result the higher levels of service offered at one's local hardware store, versus at the big-box home centers (and the McDonald's point made earlier).

However, the outlook is not entirely against direct sales. Our interviewees did believe that there would be inroads made by factory-direct systems. There were two reasons for this:

- First, of course, Tesla has shown that, at least for a high-end car with a unique value proposition selling in small volumes, a direct system can seem to work. There was much skepticism among our interviewees that the Tesla system will scale well to handle higher volumes of new sales and a larger installed service base,[35] but for now at least the system is intact and customers seem very happy. As a result, it is generally expected that new entrants (various Chinese EV companies, Elio,

[32] For example, see Cox's "Car Buyer of the Future" presentation at their very informative website, www.dealerlearningcenter.com: over half of surveyed customers expressed a preference for negotiation. This does not mean that all customers want to negotiate, or that all customers do not: as always with real humans, there is a mix of preferences.
[33] From the Consumer Reports website, http://bit.ly/2ciVWKd
[34] "2014 Global Automotive Consumer Study," Deloitte Touche Tohmatsu Limited.
[35] See for example calculations about already-long wait times for Tesla service appointments, at http://bit.ly/2eykkFB (Tesla Motors Club analyses by TMC member "Troy").

others), who look more to Silicon Valley than to Detroit for role models, will at least launch this way. And, as one person put it, since "They have more money than God," these firms can afford to follow this path for a long time.[36] And also, customers, trained by Amazon *et al.* to be more comfortable with online interactions, are nowadays more at home with the online interfaces that a factory-direct system would probably employ.

- Second, even incumbent OEMs will always be tempted to push in this direction, for the "closed loop" control of the customer experience they believe is necessary (especially for premium, expensive cars). One can argue as to whether the OEMs will be better at managing customers than dealers, but the urge is always there (see GM's Factory Pre-Owned move in this direction, if only with used cars, and see again the Hyundai Genesis Canada experiment). But as one OEM executive put it to us – anonymously of course—"The control argument for factory stores gets weaker every year. We have increasingly tightened control over dealers, from facilities to websites to processes and more, using non-margin payments to get them to toe the line, and advanced IT to monitor their every move*. If we have such control now, why would we want to spend the money on land and buildings and inventory, just to get the next few degrees of it*?"

However, as mentioned above, even if there was more movement to direct systems, our interviewees believed that dealers (and their OEMs) would respond and adapt, leading to a convergence of systems – at least from the perspective of the public. Thus if factory stores were gaining more ground, there is nothing stopping BMW or another OEM from working with its dealers to open (Tesla-like) sales or display points in mall locations also (exhibit).[37] It is unlikely the public could tell the difference anyway, as discussed: does a coffee drinker realize that stand-alone Starbuck's are company-owned, while those inside a Target store are run by Target? We have already mentioned how dealers can emulate pseudo-direct or "dealerless" sales channels: they can certainly do more, if customers ask for this.

[36] Note, however, that there has been a lot of speculation that Tesla is using owned stores because they are more easily disposable. That is, if the various firms led by Mr. Musk continue to pivot more towards making batteries and solar cells than building up the car company, they can more quickly achieve his goal of ramping up EV penetration by selling the car division of Tesla to another OEM (which would have a pre-existing global production network into which Tesla cars could be quickly inserted) – and this transaction would be easier to execute if there were not hundreds of dealer contracts to renegotiate with a purchaser. There was also speculation that Mr. Musk might keep the car factory, but sell the stores off to a large public dealership chain to run, which again would be easier to do with Tesla owning the stores. This is of course all speculation, however.

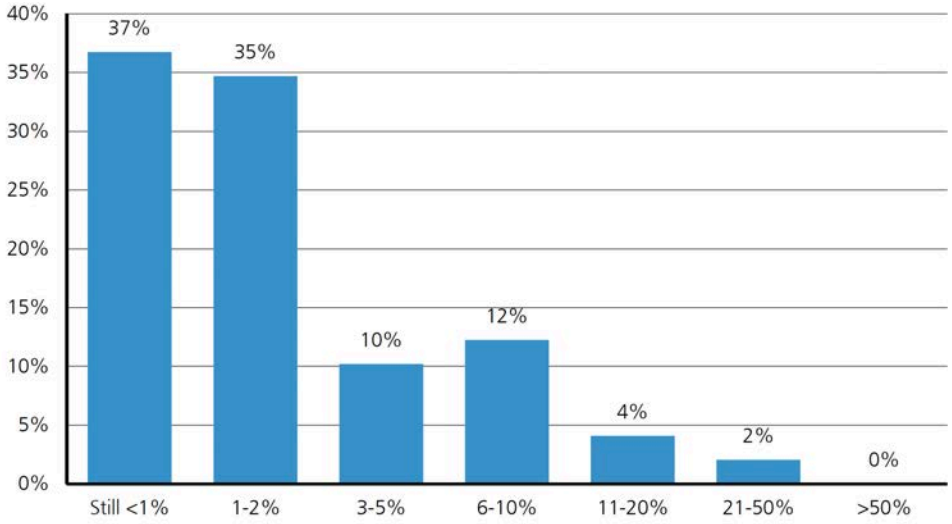
[37] Subject to local laws, of course. BMW image from www.bmwblog.com (http://bit.ly/2ciVWtW) And just for fun, take a look at this conceptual "vending machine for cars," apparently dreamed up by Studebaker in the 1950s. One wonders if such diversions hastened the company's demise (image from "A Machine That Sells Cars," Business Week, April 17, 1954).

A BMW "Shopping Mall" Storefront

As further input on this topic, we asked leading automotive analyst Colin Langan, at UBS, to include a question about direct sales in his monthly survey of US dealers. (You'll see more results from this survey throughout our report.[38]) Here's the result, collected from several dozen dealers, to the question "What percentage of new-car sales will be 'direct' in 2025?" You can see that these survey respondents did not see much growth for direct sales, with an average penetration in that year of perhaps 3%... which is still higher than today, of course.

[38] "UBS August 2016 Dealer Survey," UBS Securities LLC.

Share of New Car Sales Direct from OEMs in 2025, by % of Respondents



Source: UBS Dealer Survey

Taking all this into account, therefore, we expect the independent franchised dealership model to remain very dominant through 2025, for very sound economic reasons. However, we also expect factory-direct models to gain some ground, especially in high-priced vehicles, perhaps to a market share in the low single digits. But then, if they gain enough ground to threaten the current dealership system, we see it adapting – as it always has[39] – to emulate and compete with the more successful aspects of the direct approach.

[39] Note how independent dealers have deflected or absorbed earlier threats to their existence: beating back factory-direct experiments in the USA (by GM, Ford, and Daewoo, to name three), refusing to be swept from the board by the public dealer chains, and defeating the attacks of the internet-enabled "disintermediators" (all of whom either exited, converted to lead generators, or now act as quasi-broker/advertisers).

SPECIAL TOPIC
Chapter B: Insights from Truck Dealers

While this report is focused on car dealers, we did want to tap into the insights of the best heavy-duty truck dealers available for us to speak with (as suggested by Bert Hulgrave), via NADA's ATD (American Truck Dealers) division. Of course, there are many differences between light-duty (LD) and heavy-duty (HD) dealers: crucially, the former sell mostly to individuals, the latter mostly to fleets. And HD trucks cost easily $100,000 or more, making them much more expensive than LD cars and trucks. Thus big-rig dealers carry very little inventory, partly because few can afford to floorplan a large quantity of these expensive units. Further, the fleet customers that make up the bulk of HD volume are commercial buyers who plan orders in advance, and so have no emotional urge to "drive it home today." Thus we cannot use the low inventories that HD dealers carry as an example or goal for LD dealers. We also cannot necessarily extrapolate from the high concentration of HD dealership ownership: again, when you have regional or national fleets for customers, there is enormous pressure to own stores all across the region or nation in order to be able to service wide-ranging fleets (a big rig can easily drive 10 times the distance in a year that a car will). And HD dealers are thankfully mostly unburdened by costly OEM-dictated image programs, as no fleet manager will be unduly impressed by gleaming new floor tiles.[40]

But there are valuable insights that we gained from HD dealer interviews, which directly do apply to LD dealers.

First, there is "life after margin." Long ago direct negotiations between truck OEMs and large fleets became the rule, and so HD dealers have for quite a long time learned how to survive on minimal margins (except perhaps for sales to the dwindling stock of independent owner-operators), or even on flat per-truck handling fees (again, the "agency" model comes to mind), just as LD dealers do with their commercial sales. So if car sales compensation also collapses down to low per-transaction fees, truck dealers have shown that profits can be maintained by other means. Which leads to the insight that…

Second, fixed-ops absorption must and can be sky-high to offset those low new margins. And indeed it is: for an HD operation, as one leading dealer told us, "Fixed absorption[41] at an absolute minimum must be 100%, and 115% is the more typical target." This is of course much higher than achieved by LD dealers, who generally aim at just 75% or higher. And truck dealers have to get to these levels in the face of a challenge LD dealers don't often face: many HD fleet customers have their own in-house service operations. So HD dealers have had to be innovative in keeping service volumes up. They do this in part via widely-distributed (satellite) service-only points, and with roving mobile tow and repair vehicles (Rush Enterprises stated on its website in August 2016 that it had 286 mobile service units). We believe that LD dealers will have to do the same: LD customers may not need roadside service 200 miles from the dealership (as an HD truck carrying valuable perishable cargo might), but it is true that LD customers generally can find many more aftermarket repair facilities closer to their homes, on average, than the dealership from whom they bought the car. So if LD dealers are to make the transition to ultra-high fixed absorption, then they may need to take the same steps that HD dealers have: building distributed service-only points, and running mobile service vehicles.

[40] However, if you are believer that rideshare companies will thrive, and begin to purchase their own fleets of cars, just as rental companies do now, then LD dealers may see the portion of their sales that earn low fleet handling fees come to grow, and if they do, then LD economics will start to look more like HD economics.

[41] The fixed absorption metric is the percentage that the Parts, Service and Body Shop operating gross margin covers of their own operating expenses plus the total of store fixed expenses and dealer salary. When it reaches 100% the back of the store, as it were, is covering all the fixed costs of the entire store.

3. How many dealerships will there be?

In our earlier report we answered this question with "about the same:" we expected there would be dealers shutting down and new ones being opened up (from growing incumbent brands and from new entrants[42]). We will mostly reiterate that forecast this time around[43] – but not because our interviewees agreed on how many stores there would be… but because they could *not.* There was a very wide range of opinion on this, as these quotes illustrate:

- "About the same as now: we thinned the herd in the last big recession, we are stable now."
- "Lower: in the next recession we'll lose hundreds of stores. Last time we lost small stores who were too small to survive: next time we will see metro stores go, either because competition is too tough, or because their real estate is more valuable if used for other purposes."
- "A bit higher, as new entrants come in and as the population grows."

One emergent threat to dealer counts is the "death of geography" that we also mention below, in our section on IT. More and more strong dealerships are using the internet to reach across market boundaries, eroding the geographic barriers that once protected dealers from distant rivals. If this trend accelerates, we may need fewer stores (just as one Amazon can send books anywhere in America). However, the counter-force against this is, again, the need for local servicing (Amazon can ship me a refrigerator, but it can't easily repair the thing). The equilibrium we might eventually reach is some mix of rural sales-and-service stores, large sell-anywhere-from-anywhere sales-only stores, and suburban service-only locations.

If there was no agreement as to how many stores there would be, there was also a lot of divergent thinking about *where* these stores would be. There was agreement that stores would gradually migrate south and west across the USA, along with the overall population. But on a smaller, local scale there was debate about the rural/suburban/urban mix of stores. Some people thought the rural store was doomed: others saw these mostly-domestic (GM, Ford, FCA) stores as crucial competitive advantages for the Detroit 3, and thus likely to survive[44] (see our Rural Futures chapter). Some thought that with the move back to the cities of some of the population, we would see the return of the true "Main Street" dealership, despite high real estate costs – whereas others pointed out that even if central cities are growing, *the suburbs are still growing faster*.[45]

Once again, we turned to the UBS dealer survey, and asked these dealers our question: "What will be the change in dealership count by 2025?" You can see from the exhibit that opinions are divided, but the center of gravity of opinion is for about a 3-5% decrease, which is small enough for us not to be able to draw many conclusions. The importance of scale, urbanization, the rising cost of real estate, and other factors argue for *fewer* stores – but suburbanization, a growing population, and the arrival of new entrants argue for *more.*

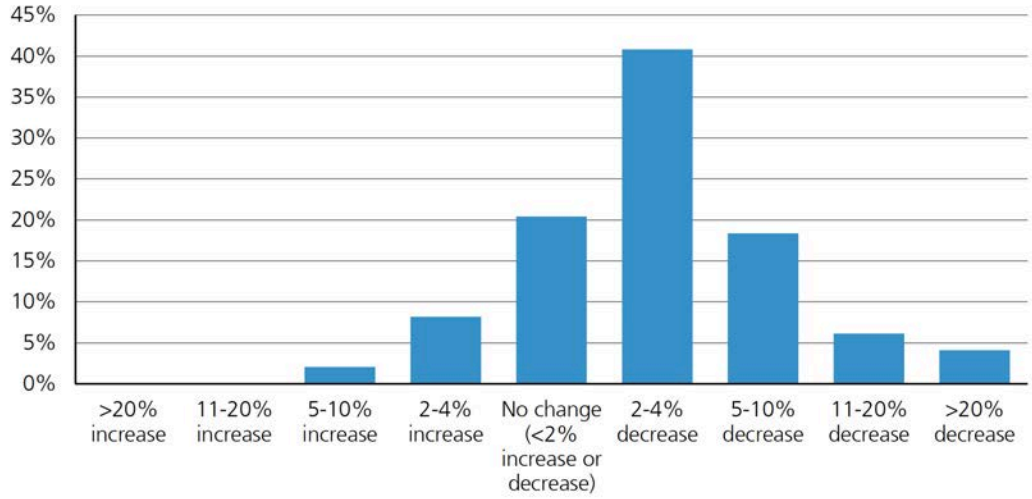
[42] Recently announced OEM plans for entry or re-entry to the US market include Peugeot, Citroen, Skoda, Ssangyong, and Geely/Lynk (plus, more speculatively, various EV startups such as Faraday, Lucid, and NextEV), but of course we do not know yet if they will a) use dealers and b) if they do, if they will need a separate rooftop.

[43] We are counting here only the main dealership rooftop: we expect (see elsewhere in this report) that the number of separate "satellite" service-only points will dramatically expand.

[44] As one interviewee put it: "If there is a Chevy store in a remote town of 20,000 people, you can be pretty sure neither Honda nor Toyota are going to come in to compete with it."

[45] This is correct: Census Bureau data shows that while urban cores have doubled their recent growth rate from about 0.5% per year to 1.0%, and while suburban growth rates have fallen from their recent high of 2.5%, they are still expanding more rapidly, at about 1.5% annually, on average. America continues to suburbanize.

Change in Dealership Count by 2025



Source: UBS Dealer Survey

To sum up, we are not very sure where these stores will be, and we are not very agreed on how many of them there will be, but if we take an approximate average of the opinions we have heard, we will forecast dealer count in 2025 at somewhat lower than today's 18,000, perhaps dropping to as low as 16,500 or so.[46] It would seem that the era of the collapsing dealer counts (from a peak of possibly 50,000 shortly after the end of World War II, to where we are today) is over. And indeed, we've been pretty stable since the end of the Great Recession. The main potential accelerant to this gentle downward drift could be if local market areas erode, under assault from internet-enabled stores working across multiple markets.

Another View: The Strange Case of Mattress Stores. It might be helpful to look at some other types of retailers, to see how numerous their stores are, to get a sense of whether we are over- or under-dealered. Let's take mattress stores. There are an estimated 4,000 of these in America, so there are roughly four times as many new-car dealerships. And that is about twice as many as about a decade ago, even with the rise in online-ordered home-delivered mattresses. A mattress is like a car in that it is fairly costly, infrequently purchased, generally needs a test drive (test nap?), is awkward to ship, and is sometimes financed. These 4,000 stores sell about 10 million mattresses a year, and are doing no parts and service work (and – we hope – no *used* mattress sales!). So given that franchised dealers sell three times as many units (17 million new and 16 used (retail)), and do also service work, as an incredibly rough analogy, four times as many new car dealers as mattress stores certainly does not look out of line. Don't take this commentary as scientific: we've inserted it only to provide some context for the number of dealerships that are out there in the USA.[47]

[46] Please note that dealer count is not the same as NADA member dealer count.
[47] For more on mattress stores, see http://bit.ly/2ciWAYn for "Why Are There So Many Mattress Stores in America?" by Utpal Dholakia, in Psychology Today, September 22, 2015.

SPECIAL TOPIC
Chapter C: Insights from Europe

In today's globalized world, we cannot ignore developments abroad. Yes, "all retailing is local" in some ways, but concepts that originate abroad can always come here: just look at your local Ikea store. And we do know that the OEMs are global, and are constantly looking to see which ideas that work in country A can be brought to country B.

Thus we asked our friends at the International Car Distribution Programme (ICDP), which is the premier consultancy looking at automotive retailing around the world, to consider what the Dealership of Tomorrow might look like in Europe and China – the other two global regions with a car market of similar size to the USA's. These chapters are based on their research and consultancy activities with the industry in both regions. Neither Europe nor China can be viewed as single markets, of course, due to a wide divergence of economic performance across countries and provinces, and the strong influence of local legislation and regulation. But nevertheless there is much insight to be garnered by examination of these huge, dynamic, and differentiated markets. We'll start with Europe.

Europe: Today's Situation and Key Trends

The Market (Supply and Demand)

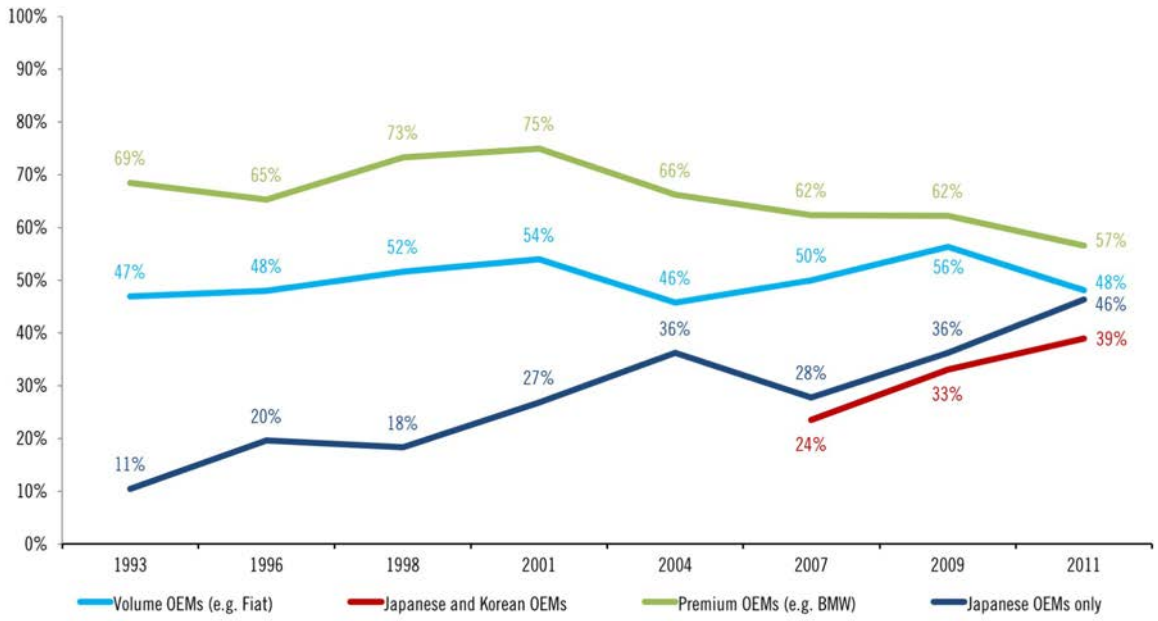
- **New car sales have been flat in Europe, and look to stay that way**. There has been less recovery from The Great Recession than in the US.[48] But in the major EU markets, fleet sales are over 30% of the market, versus under 20% in the USA.
- **Service work is declining** due to stable units in operation (UIO), greater vehicle reliability, longer service intervals, and lower annual driving distances (Europe hit "peak driving" earlier than the USA, which arguably has not). This will be exacerbated through the 2020s by reduced service work content in EVs and hybrids, and lower crash repair as autonomous technologies are introduced.
- **"Digital" is having a huge impact** here as everywhere: almost universal is new car research before any dealer visits, as is marketing of used cars through various portals; and there is gradual penetration of digital into service bookings, parts sales, finance quotes, and more. On the other hand, some developments are slower than in America, due to greater EU sensitivity to data privacy.
- **There is growing interest in "mobility" options** (e.g. car pooling and rideshare) but little evidence that the consumer is ready to abandon the personal car. So while there are many pilots and start-ups, so far few are commercially viable – yet.
- However, a shift in customer attitudes from ownership to usage can be seen in **growing penetration of leasing, often with bundled service plans.** This varies widely by market, but up to 80% of private customers in the UK (e.g.) take out a lease.
- **Factory over-capacity results in a continuous product push by OEMs, but there is still higher use of build-to-order (BTO) and buy-from-pipeline (BFP) than in the US.** European production capacity was

[48] Going forward, both the US and the EU are forecast to have very little if any sales growth. But while the US is up some 70% from its admittedly deeper recessionary trough, the 5 main European markets (Germany, France, Italy, Spain, and the UK) are up less than 5% from their 2008 sales trough.

little—and insufficiently—cut during the Great Recession, so aggressive sales targets and stock push remains strong across all brands. "Pure" BTO (ordering a car that the OEM has to slot into its production schedule) is higher than in the USA: in America it represents no more than 5% or so of sales, whereas in Europe it ranges up to about 20% or more, depending on country and brand. However, OEMs of all types in Europe have converged around 50% of customer orders being fulfilled from *pooled physical inventory and reallocation or late amendment of orders already in the build schedule,* which is well ahead of the USA. This "virtual" BTO allows specific customer requirements to be met without high dealer stock or unacceptable lead times (exhibit).

European BTO: % of Sales From the Order Pipeline

(showing only vehicles manufactured in Europe)



Source: ICDP

The Environment (Regulation, Competition)

- **The independent aftermarket, long weaker than in the USA, is gaining strength**, evolving from fragmented independents to professionalized chains, with a growing number of virtual networks linking independents behind one online brand. Fleets are also increasingly likely to use independent garages for service, even during the warranty period, than in the past. These trends combine to mean that *fixed cost absorption for dealers has been falling rather than rising*: few dealers get close now to the once normal 100% figure, and the average in most markets is in the 50%-60% range.
- **Regulation of the OEM-dealer relationship has been evolving** toward consumer protection and choice (including the right to repair under-warranty vehicles at independent garages). National law is now more of an influence on protecting dealer rights in the face of the OEM, than the EU-wide regulations that previously dominated.

- Unlike in the States, **OEMs in Europe do own a non-trivial but small (3%) share of dealerships directly, mainly in the largest markets**[49]—which is not as troubling as it may seem to American dealers, as there seems to be a state of relatively peaceful coexistence. For example, many company stores are maintained in high-cost urban locations as brand flagships, whose economics would not pencil for an independent operator anyway. And further, there is a growing tendency for European OEMs to pull back from owned stores (typically selling them to existing partner dealer groups), as their performance tends to lag that of independent dealers, and adversely affect corporate results. However the introduction of online channels is being led by OEMs, some of whom will contract directly with the customer, using dealers only for fulfilment.
- **Third-party online channels are numerous, growing, and capturing a slice of the profits that otherwise would remain with dealers.** These channels are operating across new and used car sales, service, parts and F&I, often acting as an intermediary linking seller and buyer in return for a fee. Some are positioned as the main interface for the customer, therefore not only taking a slice of the profit on the transaction, but also removing the opportunity for the dealer to build a direct relationship with the customer for future work.

The Dealers Themselves

- For all the above reasons, as well as smaller scale (the average annual new sales in 2015 was 300 per main European dealer), **dealers in Europe have weaker profits than in the USA** (their pre-tax bottom line profit margin on sales is probably half that of a typical US store) and in recent years a majority of dealers have been losing money.
- Thanks to such low profits, and also rising facility costs (even as e-commerce would seem to make physical facilities less relevant), **the dealership count in Europe has been in decline** and this is expected to continue. Dealer counts that were stable from 2004 to 2008 started falling in the Great Recession, by about 10% as of 2016, and are expected to drop another 10% by 2020 or so.
- Further, as in the States, **consolidation of dealership ownership has been advancing** – but again as in the USA, primarily though the formation of regional groups rather than national or pan-European mega-chains. Smaller (often rural) outlets continue to vanish, except for those who adopt a more diversified business model, e.g. offering multiple brands from the same showroom (which is not unusual in Europe), or by developing an aggressive AMM repair strategy.
- As in the USA, OEMs in Europe have been shifting the source of dealer profits from margins to payments (e.g. for CSI, for specific investments made, for volume targets hit). They have also been pushing OEM-branded service plans, where they become the bill-payer for service work, and mandate the hiring of additional staff, even becoming involved in the recruitment of management. Thus, as in the USA, **OEMs are increasing their influence on dealership activities across the board.**

Implications for the European Dealership of Tomorrow

Together, these trends show a clear path of what the European Dealership of Tomorrow will look like:

- **Dealerships in metro and urban areas will be most affected** – these represent the majority of sales volumes, and are most subject to the pressures discussed. Smaller rural dealers (making up a substantial minority of the total count) will have little influence on the changes, but also can

[49] And in some cases, e.g. among German premium makes in their networks in Germany, this percentage is much higher.

survive—on the basis of local customer relationships. Consolidation of ownership especially of large and medium dealerships will continue.

- **The number of traditional dealerships in metro and urban areas will decrease by around 40%**. This will be partially offset by an **increase in the number of smaller sales-only and service-only formats** operated as satellites of large hub dealers.
- **Large dealer groups will continue to centralize responsibilities and shared services**, leaving the individual stores to focus on local, mainly face to face, customer relationships, and fulfillment of sales and service needs.
- All **dealers will operate in an omni-channel environment,** meaning that they will support leads completed in another channel (e.g. online), or close deals which have been largely processed in another channel. This will drive a move away from a "winner takes all" margin model to one of fee-for-service and other factory payments distributed across participants.
- **More cars will be bundled with service, F&I, and more, to provide a "mobility bundle"** that reduces the focus on the one-off sale, and moves it to longer term relationships, across more touchpoints. **Neither OEMs nor dealers are well-prepared to handle this transition today**
- **Dealers will lose share (or at least the customer relationship) to online channels** in all parts of the business as existing major e-commerce players and new entrants muscle in on car sales, service and F&I, leveraging their broader relationship with the customer across other product categories.

Insights for the Dealership of Tomorrow in the USA

If the European experience is any indicator of the future for America (and it may not be):

- **Expect the general rate of change to remain high**: this is a global phenomenon. Change in other retail sectors is happening faster, and consumers will soon demand change to align with their broader experiences of the digital world. Dealers will have to evolve quickly to compete.
- **Decide now if you want to be a consolidator, or be consolidated**: there will be room for large chains, and maybe small rural stores, but dealers in between may want to "go big or go home."
- **Don't panic about company stores: OEM-owned dealers are no threat…** other than to themselves. OEMs generally have not proven capable of operating stores better than independent dealers can.
- **…but *indirect* control by OEMs probably is.** OEMs will continue, mostly through the use of IT (both to reach *in* to store operations and *out* to customers), to try to exert more and more control.
- If Europe is any predictor, **any trend towards true BTO will be modest**, as customers choose to "Buy It Now." This implies that the inventory burden will not be falling soon; we'll still need a lot of land.
- **Dealers must put an emphasis on pursuing parts and service work as the total market shrinks:** on the one hand other profit sources (e.g. new cars) are eroding, and on the other the independent competition is getting stronger: dealers need to do more than add service bays.
- **OEMs and dealers should cooperate to win back customers who have migrated to third-party online services**, and thus rebuild their value proposition and so their profits. There is no reason dealers cannot reclaim this ground, lost in large part because they were "asleep at the switch."

4. Who will own the dealerships of 2025?

So let's say that rooftop count gently declines over the next decade. The next question is, who will own these stores? Our interviewees were completely unanimous on this point: we should expect further consolidation of store *ownership*, even if there is not as much consolidation of *stores* themselves. There was less agreement as to how much consolidation there would be.

Right now NADA data (which is based on analysis of NADA members, who make up the great majority of, but not all of, total dealerships[50]) shows that the average owner (whether an individual or a company) owns about 2.2 stores. If we just look at NADA figures, and round numbers to avoid giving a sense of false precision, since ownership numbers are difficult to verify, some 12,000 stores are owned by about 2,500 owners, and then there are about 5,000 stores controlled by sole proprietors, for a total of 7,500 owners. And further consolidation would only be continuing a trend: in 2008 the average NADA owner controlled about 1.8 stores (11,000 stores owned by 3,000 multi-store entities, and 7,500 sole proprietors). So not only have we seen the multi-store owners increase their reach (going from about 3.5 to almost 5 stores per chain), but a drop in the sole proprietors (falling from 7,500 to 5,000).[51]

Why is ownership consolidating?

For various reasons, according to our interviewees:

First, as stores have grown in absolute size, the tried-and-true succession plan of allowing the General Manager to accumulate enough funds to buy out a departing dealer principal has become less viable: the stores are just too expensive for a single wage-earner to accumulate the capital to buy one.

Second, more owners *seem* eager to exit, than ever before. Auto Team America's survey of just a few years ago[52] showed that some ¾ of dealer principals surveyed expected to cut back their time at the stores, or sell out entirely, over the next decade. We all know that dealers grumble about "throwing in the towel" more than they actually *act* on their complaints, but the tendency is still clear. Dealers list various reasons why they are ready to call it a day: they have no children eager to inherit the business, the business is less fun than it was as OEMs exert more control, or they are just unwilling to tackle the wrenching changes needed to update their people and processes to the new ways of selling cars.

Third, consolidation is a natural tendency in any industry that is experiencing generally flat revenues. For every dealer who may want to quit there is another who wants to grow, and since it is almost impossible to just open a new store on one's own (like the owner of a restaurant chain could, for example), the main path to growth is to buy someone else's store. (This fact also acts to *slow* consolidation: since the selling dealer in Town X knows that buying his or her store may be the only option a growing chain has to expand in there, the seller can charge top dollar for the store, retarding the pace of acquisitions.)

Fourth, passing the store along to the offspring is getting problematic. A first-generation dealer might have two children who could split ownership of the store. But then one of these children has 4 of his own, and the other 3. When it comes time to hand the store off again, things get complicated quickly and equity

[50] If there are roughly 17,000 NADA members, there are probably some 18,000 total dealers, and if there are some 7,500 NADA owners, there may be about 8,000 total owners.
[51] We'd like to look further back in time, but there are issues with NADA data comparability before 2008. Certainly we do know that if we go back to 1965 or 1970 the number of stores per owner was pretty much about 1.0.
[52] "2025 Dealership Vision: What Lies Ahead!" by AutoTeam America, www.autoteamamerica.com

among family members becomes tough to maintain. In this case, it is easier to sell the store and divvy up the *money*, than to share control and operation of the *store*.

Fifth, and probably most important, there is the issue of cost: smaller dealers were united in their view that the business was becoming too expensive to continue to invest in, and so the time may have come to sell out.

We don't disagree, but we need to make again (as we did in the Rural Futures chapter) the fundamental distinction here when it comes to cost: there are *relative* costs (expenses) and *absolute* costs (investments), and the problem for dealers is the latter: the rising investment burden. Financial analysis of dealerships, by this author, by NADA, by McKinsey, and by other analysts, shows that small stores can easily equal the net profit percentage (ROS) of larger stores. "Size doesn't matter" (much) in this case. The trouble is, this equality of *relative* profit is not matched by an equality of *absolute* profit, which is what pays for required investments. That is, if a store needs to put $1 million into a new facility, a large store making a 3.5% net return on $30 million in revenue can swing it with one year's earnings, whereas a small store making even 6% on $10 million in revenue cannot.[53] *This* is the problem for small stores: they cannot as easily accumulate (from retained earnings or from debt) the capital needed to keep up with OEM-requested investments in physical assets (stores) and virtual assets (IT systems). Thus we see an increasing number of sole proprietors not willing to "bet the family fortune one more time," on a new or updated store, and so they start looking for buyers.

Who are the likely buyers?

So if there are many pressures to sell single stores or small chains, who are the buyers of these units likely to be? Generally, our interviewees expected them to be private companies.

The public chains, despite their high visibility and impressive results, have not really been major net consolidators for some time now, and are expected to remain fairly quiet over the next decade as well. In fact, the "Big 6" chains have not increased their combined market share of new car sales from roughly 8%-9% over the last ten years.[54] There are various reasons for this stagnation, including:

- Governance: as a chain gets very large it might gain scale economies, but find controlling all its far-flung stores more challenging. As one interviewee put it: "The public chains can scale purchases of motor oil, but they can't scale leadership and entrepreneurship – at least not yet."
- Wall Street skepticism: in general, public markets are not happy with the cyclicality of car sales, and so periodically beat down the share prices of the Big 6, reducing their ability to buy stores.
- Lack of strong scale economies: the limited evidence we have indicates that most chain economies (and the benefits of brand diversification) top out at 50-100 stores, so that growing the large public chains further than that may not bring them much benefit.
- Schizophrenic OEM views: the factories like their stores being run by large professional organizations, but on the other hand they also like a local entrepreneur with a personal stake in

[53] The situation is even worse if the sole proprietor is up against a chain of stores: each of the chain's stores can be less profitable than the solo store, but together they can raise a higher amount of capital.

[54] This flat trajectory is certainly not what many observers expected, when the public chains first appeared. No less an automotive expert than Edsel Ford II predicted, back in the 1990s, that public companies would soon own 40% of all franchised dealerships in America, that manufacturers would own another 40%, and that only 20% would be left for family-owned, private capital ownership. (Cited in an essay on the New Jersey Coalition of Automotive Retailers website, www.njcar.org, "Looking Back to Look Ahead.")

the store (and an intent to stay around for many years)... and are not sure if they want ownership concentrated in the hands of a few large retailers. Thus the OEMs' fluctuating views on public ownership, from positive (encouraging buyouts of weak stores) to negative (imposing framework agreements limiting same-brand store counts).

To be clear, we *do* expect the public chains to grow their share of the market over the next decade. But we are not at all certain that they will be the leading consolidating force.

So who will the private buyers be? Of course, first and foremost, **other dealers**: if Town X has three stores, two owned by Fred and one by Linda, the likely best buyer for Fred's stores will be Linda, who knows the territory well and who would most benefit from adding Fred's stores. Further, as we will see elsewhere in this report, there is a strong belief among our interviewees that the gap between high- and low-performing stores will widen, as the former more quickly adopt new and more productive marketing, selling, and personnel policies. If this turns out to be the case, then stronger dealers will grow even stronger, and be able to more easily afford buying out weaker rivals.[55]

But what about **private equity**, which has made some moves in this direction? We don't think traditional private equity (PE), with its 5-to-7 year buy-fix-sell model, will be a big player. As one PE firm told us:

- "We don't like being at the mercy of the OEM, both on the way in ("can we buy this?") and on the way out ("can we sell this to X?")."
- "We have a cycle mismatch: our 5-7 year investment horizon cannot bridge automotive cycles, which tend to be about the same length. Someone with a 20-year horizon can ride out cycles. We are more likely to run into a downturn just at the time we need to sell."
- "Dealerships often are very dependent on key people for success, more so than other businesses we know. We'd rather be dependent on a team, or on standardized processes, or on structural advantages, than constantly worry if 'the main guy' will depart for greener pastures."
- "Our organic growth is capped. We can't easily move a store, close one, open one, or change brands. So the best we can do is try to outperform in new market share or service penetration. These are games of inches, of attrition: they are hard. Dealerships are profitable, but they are more like annuities than like equities."

That leaves the other flavor of private money, **family offices**. These investment arms of wealthy families have already made a few high-profile investments into dealerships, and we expect they will make more. Their investment strategy is well-suited to buying dealerships, as quotes from these groups reveal:

- "Dealerships are family businesses, and so are we: we understand each other."
- "We like not having to compete with PE in buying dealers: [as discussed above] PE usually cannot get in, and that is good because they are otherwise our biggest rivals in investing."
- "Family offices tend to have long investment horizons, often decades, and so we can weather the cycle well. Especially, we can step up and buy more stores, for cheap, during downturns."

[55] And one more point: the more stores a dealer owns the more career paths she or he can open up for high-performing managers. As one dealer put it: "Let's face it, if I own just one store, the org chart is crowded with all my relatives. If I have a few stores, I can create growth opportunities for good managers, and so I can attract and retain better staff."

- "Family offices are as much about preserving capital as growing it, so we are pretty happy with dealerships, as they throw off a lot of cash pretty predictably… and if they don't grow much that is okay, though of course we always seek growth, too."

So we have an established trend of consolidation, some good reasons for it to continue, and buyers ready to snap up selling stores. What is our forecast for how much further consolidation goes, by 2025?

Before we state that, let's check again with the dealers surveyed by UBS. Opinions were all over the map, but from the data we could draw three clear conclusions:

1. No one thinks there will be an *increase* in the number of owners. Consolidation continues.

2. The average expected decline among the bulk of respondents was 15% or so, to perhaps 6,750.

3. However, there was a small but vocal minority (about 10% of respondents) who foresaw a *complete collapse* in the number of owners, to 3,500 or even fewer.

Given these puts and takes, perhaps it is best for you to make your own forecast, but here is mine. I believe that on the one hand that the pressures to consolidate are high, so that a count of 5,500 might be where are headed, but that on the other hand the frictional "drag" on actually getting 2,500 transactions done (with a recession somewhere in the next decade throwing all calculations off) will slow the pace. **I'll go therefore with 6,500 owners by 2025, down from today's 8,000 by about 20%.**[56]

Within the ownership base the big gainers will be regional chains of 50-150 stores, and the big losers single-point stores (especially in highly-competitive metro areas: see our Rural Futures chapter for commentary specifically on country stores[57]), while the public chains will slowly grow.[58] Most owners will still be private individuals or firms, and within firms, family offices probably will be well ahead of private equity. This concentration of ownership will not occur evenly: in recent years in fact the rate of consolidation has been slower than this forecasted rate.[59] What all our interviewees are expecting is that the next downturn will trigger another exodus, as did the last one. It is in times of troubles that sellers most readily revise their price expectations, and brave buyers can capture the opportunity. So we may not see much happen for a few years, and then a rapid drop, followed by some stability again.

[56] Extrapolating from NADA member numbers to total dealer counts.
[57] Also see our trucks chapter, because in that end of the market consolidation is much more advanced, since for these dealers most of their customers have also consolidated, from solo owner-operators to multi-truck fleets.
[58] Barring the probable event of at least one public chain buying another.
[59] For example, we lost only 150 sole proprietors between 2014 and 2015, a time of flat or rising sales, but over 700 between 2008 and 2009, when sales were only beginning to recover from "The Great Recession."

SPECIAL TOPIC
Chapter D: Insights from China

If American dealers can gain valuable insights from a large mature market like Europe, they can also learn from China, which is another huge market—but an *im*mature one. That is, it has not yet settled into a fixed pattern: over 70% of Chinese car owners are just in their first car now, and the average age of the fleet is only 3 or 4 years. This means that there is an absence of tradition, and so innovations in car retailing (for better or worse) are easier to try out than in both the USA and Europe. China is in some respects a laboratory for automotive retailing experiments. (The insights in this chapter are again from our friends at ICDP, the experts in global auto retailing.)

Today's Situation and Key Trends

The Market (Supply and Demand)

- **New car sales continue to grow, although confidence in the market has decreased**. While growth remains strong by western standards, it has in part been propped up by government tax breaks (e.g. for small-displacement cars). And there are also large geographic variations in demand: for example, some large cities have flat sales, due to registration restrictions aimed at reducing congestion. However, fundamentally, demand should be stable, as it is still the case that many more Chinese have drivers' licenses, than have their own cars.
- **The aftermarket is growing rapidly,** fuelled by 20 million units being added to the fleet every year (few cars in China are old enough yet to scrap), and by the ageing of that fleet. This drives an upsurge in independent garages, as Chinese dealers have weak post-warranty customer service retention, focused as they have been on new sales.
- **The used car market is largely unstructured** and is mostly ignored by new-car dealers. It is dominated by independents, who lack tools familiar to Western dealers such as widely accepted price guides. This confused situation has given opening for a **large number of internet start-ups to try to secure a position as *the* trusted intermediary** in the used car trade.
- **The Chinese car buyer is still learning, which drives a strong need to research potential purchases extensively online, before ever speaking to a dealer.** And as consumers here are enthusiastic "digital natives," there is a much trust in e-commerce: most new car shoppers start on big online platforms (e.g. Autohome, BitAuto). Dealers lag badly: most do not have their own full websites.
- **There is high usage of mobility services**, both rideshare and carshare. Didi Chuxing dominates the former (after winning its battle with Uber). In the realm of carshare, note that Daimler's Car2Go signed up 76,000 subscribers in the first month of operation in just one (though large) Chinese city.
- **As for F&I, the use of credit for new car purchases is growing, but is still under 30%**. And the absence of reliable valuation guides means that credit is not generally available for used cars at all. Leasing is almost totally absent, due to this problem, and to issues with lease taxation.
- After the "gold rush" that peaked in 2014 (which ended with OEMs stuffing dealers with cars), inventory levels are now normalized. The supply model is firmly one of **supply from stock, as in the US, but without the OEM floorplan support we see in the USA.**

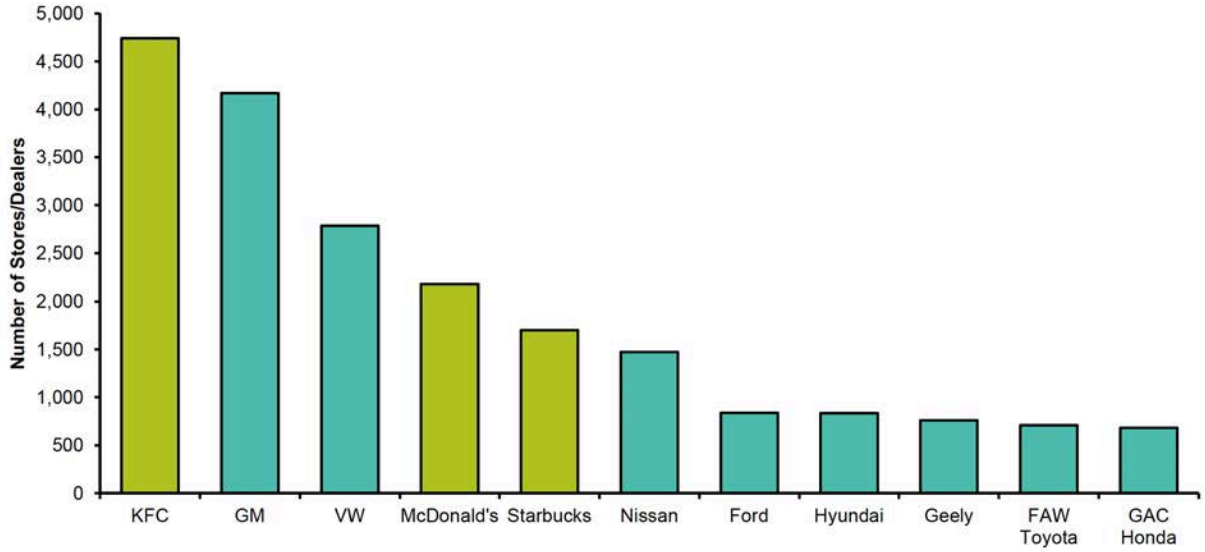
The Environment (Regulation, Competition)

- **The government is interventionist: it can impose new rules at short notice, with little consultation.**
  - In **service**, recent rules have aimed to open up the aftermarket (e.g. "right to repair").
  - In the area of **franchise agreements**, these are being improved somewhat, but contractual defenses for dealers remains weak by European or US standards.
  - In **used car**s, regulatory activity is focused on allowing easier transfer of cars between geographic areas (as in the USA and the EU), and other market efficiency improvements.
  - On the **vehicle** front, pollution and congestion have led to rules which restrict new car sales by size and fuel type, and support the development of low-emission cars.
- **Online players are relatively unregulated,** and represent a direct threat to dealers. As noted, most new car business for dealers is routed through Autohome and BitAuto, while Alibaba (the local eBay) is launching its own car sourced from SAIC (the Chinese JV partner of GM and VW). New entrants in sales and aftersales – often with significant financial backing—are constantly popping up.

The Dealers Themselves

- After years of good profits and quick returns on substantial investments, dealer profitability has been hit by over-supply, leading to deep discounting. **In 2015, 30% of dealers were reported as losing money, with only 22% "meaningfully profitable"** according to CADA, the dealer association.
- Although there is room to add dealers in developing parts of the country, **there are too many dealers in many big cities, where market growth has stalled**. For many dealers, sales per store have been almost flat for the last 5 years. In support of the view that China is over-dealered, see the exhibit:[60] there are more GM and VW dealers in China than there are Starbuck's or McDonald's:

Dealer versus Retailer Store Counts in China



Source: AllianceBernstein

[60] From "Chinese Autos: Would You Like Fries With That? The "McDealering" Of Chinese Cities...In 5 Charts," from Max Warburton, AllianceBernstein LP, December 16, 2015 release.

- The **top 100 largest dealer groups in China have over 25% of the new car market**, a higher level of concentration than in Europe, but similar to that in the US. This is in part because the market has developed so rapidly that many owners have limited experience with more typical (softer) market conditions, and so are choosing to exit rather than step up to the challenge of a tougher business climate. Their selling out to more experienced rivals is fuelling consolidation.
- Thanks to recent years of very fast growth, **Chinese dealers have been largely focused on the new car market, and in service do not yet retain many customers beyond the warranty period**. However, because the fleet is so young (and thus much of it is under warranty), dealers still have a **2/3 market share** in service. This share will decline.

Implications for the Chinese Dealership of Tomorrow

Because of its recent emergence, this market has little of the inertia found in mature markets like Europe or America. Thus any pressure for change means there can be rapid shifts in direction. We are not sure how things will evolve (there is no history to extrapolate!), but we can make some conjectures:

- **Some large dealer groups will apply best practices and innovations,** leading to stronger businesses. They are likely to be concentrated in the larger cities, and be focused on premium and JV brands (brands produced by Chinese OEMs jointly with a foreign OEM partner).
- **Most other dealers will lose many customers to online channels,** with whom the customer has a better relationship, meaning these stores might become simply fulfillment centers.
- **Independent repairers** will grow their dominance in the ever-expanding fleet of out-of-warranty cars, so that in a few years **they will hold two thirds of the market** (versus 1/3 now).
- Independent **used car platforms will capitalize on their initial lead to build a strong and trusted position linking seller and buyer**, and extending their services beyond marketing, condition reports and warranties, to offer credit, service plans, and more. This will constrain the development of the used car business for franchised new-car dealers.

Insights for the Dealership of Tomorrow in the USA

These Chinese developments offer lessons for dealers in America:

- **It is crucial to command the digital space**: US dealers have already had a wake-up call with the growth of players like TrueCar. In China we have seen that well-organized digital channels can win the trust of the consumer, and shove the dealer aside. One has to always remember that the dealership includes the digital places visited by the customer, not just the physical site.[61]

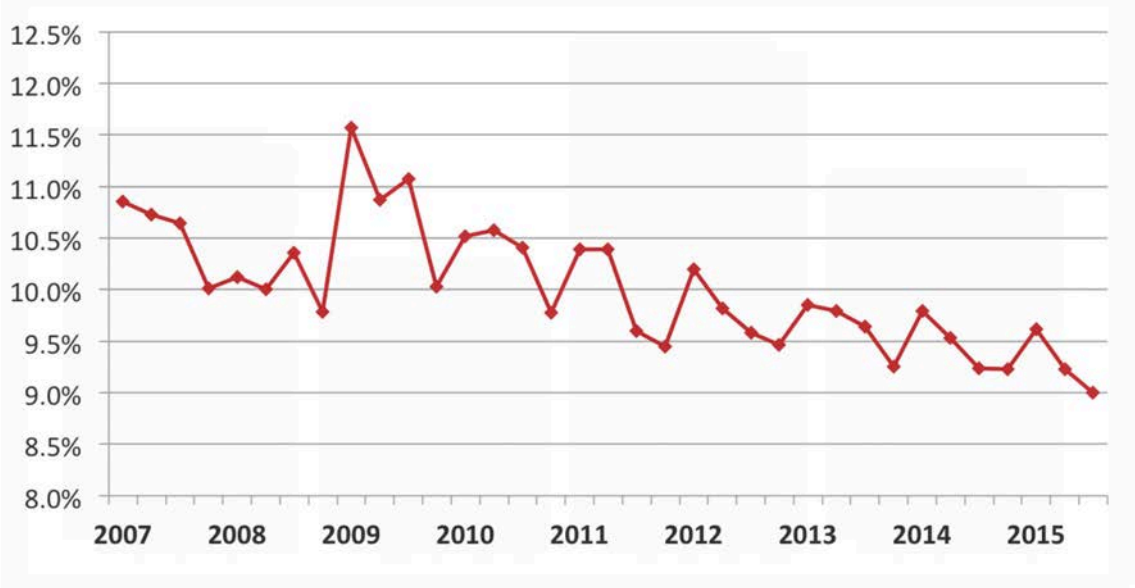
[61] As counterpoint, however, just because an online channel can gain consumer trust and volume, that does not mean it can make money doing it. As one experienced China analyst told me: "My biggest issue with online car sales has always been (and this is why heads of sales at BMW and Mercedes in China say "nobody's found a credible business model for online sales") the lack of differentiation between something like Autohome, and a physical dealer. The product (i.e. the car) is homogenous for the most part, and the biggest challenge in dealer profitability right now is discounting. If retail pricing falls 3% across the market, then surely both Autohome and physical dealers get hit by roughly the same amount? If anything Autohome, in order to gain share with online sales, has to sell at a discount to the physical dealers – which gives it worse economics. What could cause me to revise my view is if indeed Autohome got special models that dealers did not get on their own. This would be truly novel, and a real Pandora's Box: if their models are not very popular then Autohome will have trouble making money on them; but if they are popular then the dealers will howl, outraged that their OEMs have given "the good cars" to this interloper. And no OEM can afford much dealer backlash."

- **Chinese consumers do not look at each retailing sector (e.g. books, furniture, cars) in isolation:** they have learned to trust online brands generally, and to question physical retailers. Their expectations are shaped by how *all* sectors develop, not just by the slow-moving auto industry.
- **Do not give up on service retention on older cars**. Until now, it has been possible for Chinese dealers to ignore older cars, but as the fleet expands this represents a growing weakness.
- **Look out for online penetration in used cars.** If new entrants succeed in China in prying this business away from dealers, they could export that model worldwide.
- **Size is not everything:** 30% of dealers here lose money, yet annual new units average over 1,000 per store! Skills are more important than scale: as the saying goes, "Revenue is vanity, profit is sanity."

5. How profitable will the dealership of 2025 be?

"Not as much as it is today" was the general view of our interviewees, though few wanted to make a numerical forecast. The Auto Team America survey is an exception, projecting a 25% decline in average PBT (profits before tax), over the next decade, even as topline revenue grows by 10%. There were many reasons for this pessimism: collapsing new car margins, increasing used-car competition reducing margins there (exhibit), falling service requirements of cars, regulatory pressure on F&I, etc. Even the body shop should *eventually* see a decline, as better accident-avoidance technology (ADAS, Advanced Driver Assistance Systems) penetrates the fleet.

Used Vehicle Retail Gross Margin, Public Chains



Source: Tom Webb, Cox Automotive[62]

[62] Specifically, from "Top Trends That Will Drive the Used Vehicle Market," presented at the NADA's 2016 convention in Las Vegas, using data drawn from the financial filings of 7 publicly-traded automotive retailers.

And of course, we are in a period when profitability is at high levels, and so we should expect some regression to more normal numbers. All these factors are well known. But there were also more than a few optimists in our survey, making the following points:

- "Glenn, ALL industries are competitive and ALL the industries our family has ever looked at have told us times are tougher now than they ever have been. When was the last time you heard someone say 'My business is just getting easier and more profitable.'? Somehow they all persist [okay, maybe not newspapers and video stores], and so will we."
- "The individual store may show a lower profit margin, but the return on assets and equity may be fine, as we better manage inventories and (finally) cut back ridiculous facility investments."
- "Dealers worry about regulation 'taking away F&I.' But we'll adapt: if reserve goes away now we'll find other things of value to offer customers."
- "Maybe the average store will be worse off, but that will give stronger players like ourselves the chance to buy them cheaply and turn them around. Even in a stagnant industry there will be plenty of room for the better firms to do better."

And finally, there is the "Warren Buffett effect," as it were: we can take some comfort in the fact that the person who is arguably the smartest investor of our time recently put over one billion dollars into a dealership acquisition, which is a vote of confidence of supreme significance.

Our own view, then, is that we should expect income statement ratios (e.g. pre-tax profit margins) to be somewhat lower in 2025, while balance sheet ratios (e.g. return on equity) may hold up better. But stronger profits may come only to more aggressive stores, either through operational excellence or M&A: the average store may see itself falling further behind.[63] Let's now take a closer look, in the next core-topics chapter, at how stores in 2025 will make money, even if at an overall lower level than today.

[63] These comments apply only to large-scale urban and suburban stores: see our Rural Futures sidebar for comments on rural stores, which may be evolving differently.

SPECIAL TOPIC
Chapter E: Electric Vehicles (EVs)

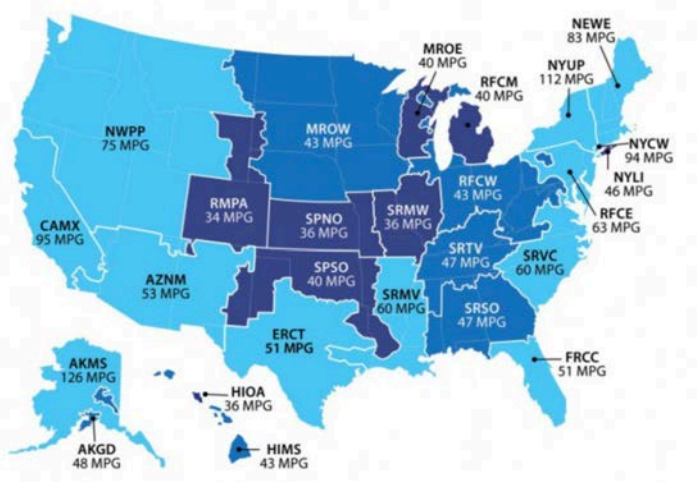
Most industry analysts believe that sooner or later, electric vehicles will become mainstream options for consumers: the challenge remains forecasting precisely *when* "sooner or later" is. The bad news is that opinion is sharply divided as to when they will finally break through in the USA – while the good news (from a dealership perspective at least) is that whenever they do, it might not matter much to dealers.

Before we dive into the topic, definitions are in order. We will focus here on so-called "plug-ins:" this term includes both cars powered only by batteries (BEVs, battery electric vehicles) and hybrid cars whose electric drivetrain can be recharged from grid power and so can be run purely in electric mode, without ever filling the tank (although that is an option). These are so-called plug-in hybrid electric vehicles, or PHEVs. A Nissan Leaf exemplifies the BEV plug-in, and the Chevy Volt the PHEV plug-in. Most industry analysts lump them together, and so will we, as "plug-ins" or "EVs." This is not always correct (for example, a country may give purchase incentives to BEVs but not PHEVs), but is in most cases useful, so we will go with it.

The challenge in forecasting EV sales in America is that they will be the end result of the interactions of several different sets of trade-offs, each of which is changing over time:

- **From the TECHNOLOGY point of view**, the price and performance penalties EVs suffer relative to ICE (internal combustion engine) vehicles are steadily shrinking: on-road performance has evolved from sluggish (e.g. GM EV-1) to speedy (e.g. Tesla S), battery costs are falling, all-electric range is expanding, speed of recharging is accelerating, and battery life is lengthening. On the other hand, ICE powertrains are steadily improving as well, so that in terms of both fuel economy (which matters especially to consumers) and emissions (which matter especially to governments), the EV advantage over them on both fronts is relatively narrower than it once might have been. Thus in much of the Midwest, where coal-fired powerplants, with their high greenhouse gas emissions, generate the electricity that charges EVs, a regular gasoline car achieving about 40 mpg will match the EV in total emissions.[64] And as long as gasoline hovers in the $2-$3/gallon range, there is less of an EV fuel-cost advantage as well. Yet there remains an initial purchase price penalty for

[64] See for example 'Effect of regional grid mix, driving patterns and climate on the comparative carbon footprint of gasoline and plug-in electric vehicles in the United States," Yuksel, Tamayao, Hendrickson et al., in Environmental Research Letters, 11, 2016. Or, from the Union of Concerned Scientists, see this map of "rollover" points across America: thus in California (where natural gas and other low-emissions sources dominate power generation) any gasoline car getting under 95 MPG will be "dirtier" than an EV, whereas in St. Louis a car getting 36 MPG or more will be cleaner than an EV, as the latter will get its power mostly from coal there. Source: https://goo.gl/b4Olda



EVs, especially BEVs, which can run into the thousands of dollars per car (before incentives and credits), though this penalty is steadily falling.

- **From the GOVERNMENTAL point of view,** there is a relentless drive to regulate EVs into existence, for emissions and for fuel efficiency, but also a growing realization that the cost of pushing customers to buy them may be unsustainably high. It is one thing to offer a $5,000 tax credit on EVs when only thousands are being sold, but budget-busting to continue this when the goal is millions of sales. Thus Norway, which is the market with highest EV penetration, got there in part due to astonishingly generous incentives[65]—which may no longer be sustainable.
- **From the CUSTOMER point of view,** at least in America,[66] EVs remain mostly undesired. The products (so far) are mostly off-target: in an era when trucks, SUVs, and crossovers dominate, most EV offerings are small or mid-sized sedans. The value proposition is still weak: anxiety about limited EV range ebbs as the technology improves, but concerns about fueling (slow "fill ups," limited charging networks) remain, and high rates of depreciation do not help.[67] Lower fuel (electricity) cost is a plus (though not much when gasoline is as cheap as it is now), and lower maintenance costs (for BEVs if not PHEVs[68]) should provide a boost, but the data on this are not yet conclusive, and so customers may not yet be persuaded. The purchase price penalty is a major barrier.[69] However, increasing exposure to EVs, improving technology, and the evangelizing efforts by Tesla, Nissan, and GM on behalf of EVs are generating positive effects, and so sales of the vehicles are growing in the USA. But this is from so small a base that they haven't yet achieved even a 1% market share.[70]
- **From the OEM point of view,** plug-ins are simultaneously—tomorrow—the seemingly-inevitable path and—today—the necessary evil. Driven by regulatory pressure to at a minimum electrify the fleet (meaning primarily widespread hybridization), there is debate within OEMs as to how much further they will have to go, and how fast. Many executives see EVs as "compliance cars," built only to meet regulatory quotas (as in California), at great losses, while others see a competitive advantage in moving more quickly to EVs, as – eventually – attractive products in their own right. And above and beyond these considerations, traditional OEMs may feel compelled to step up their game if only to outflank a series of new entrants, from Tesla and (maybe) Apple, to any number of Chinese firms, that are well-funded, free of legacy issues, and intensely focused on EVs as the cars of the

---

[65] EVs in Norway are exempt from (a very high) sales tax, registration fees, and company car tax; and they enjoy nation-wide free parking, free access to toll roads, reduced ferry charges, free access to bus and HOV lanes, and a highly subsidized national charging network. For a full list, see "Electric Vehicles – environmental, economic and practical aspects," by Figenbaum et al., Institute of Transport Economics, Oslo, September 2014. The Norwegian government is now considering reducing these subsidies, since budgetary pressures on the country are mounting as the oil price remains low (given North Sea oil drives the Norwegian economy).

[66] China may adopt EVs faster due to government policies, and Europe due to high gasoline costs.

[67] We understand that part of the depreciation problem is illusory, due to government incentives: if a new EV sells at $30,000 and comes with a $5,000 tax credit, which a second buyer of the (used) car will not get, then a reasonable resale price of $20,000 after a year "looks like" a 33% depreciation rate. But part is very real: there is the problem of battery deterioration and replacement: if a BEV's battery costs (e.g.) $5,000 to replace, and if it needs to be replaced after (e.g.) 7 years of use, then resale value will of course be significantly damaged just at the point when most owners are ready to sell. Say what you will about ICE engines, but they rarely need to be entirely replaced after a few years. And finally, current EVs such as the Nissan Leaf are still suffering rapid falls in value, possibly because consumers expect next-generation plug-ins to be much better cars, as the technology advances.

[68] BEVs should be cheaper to maintain than ICE vehicles, as electric motors have inherently low rates of wear, as there are fewer fluids to change, as the powertrain in general has fewer moving parts, and as regenerative brakes wear out more slowly than regular brakes.

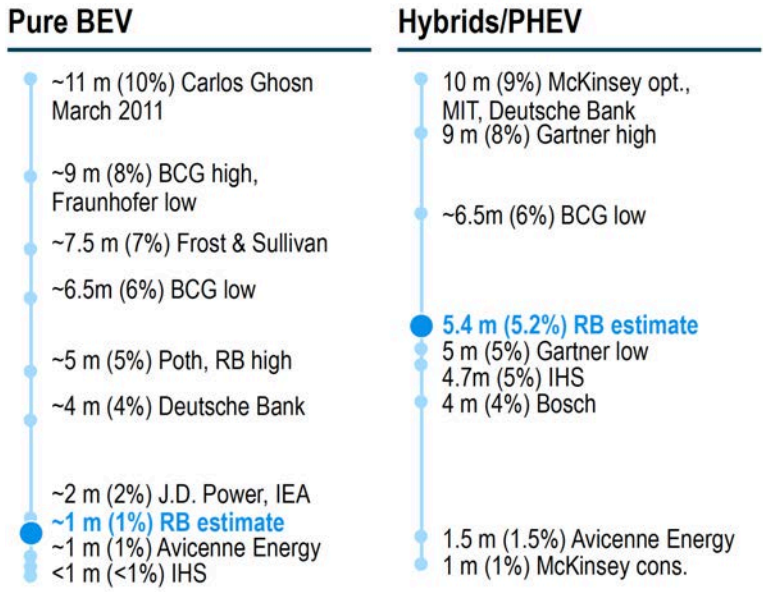
[69] Though maybe not as much as we thought: Nissan Leaf sales remain low despite its very low price (before and after incentives and credits), while high-income customers report the highest interest in buying an EV (see the UBS report "UBS Evidence Lab: What consumers think about electric cars, and what it means for auto profits," September 2016). In general so far higher priced EVs have done relatively better in America, although this may change with the launch of long-range mass-market BEVs such as Chevy Bolt and Tesla 3.

[70] As of this writing, US EV sales from 2012 through 2015 were 55,000, 100,000, 125,000, and 115,000 (sic), with 2016 expected to come in at about 140,000. See http://evobsession.com/category/research/sales/

future. As a result, there are many new EV models coming from a wide range of OEMs, and as is always the case in this industry, supply can drive demand: faced with more choice of models, consumers buy more.

So, as you can imagine, by the time one adds up all these pluses and minuses, and puts and takes, projections for EV sales anywhere in the world are all over the map, as this 2014 chart from Roland Berger illustrates[71]:

Forecasts of EV Sales Share Globally, 2020



Source: Roland Berger

As a further illustration of this confusion, an assortment of current forecasts for US EV sales in 2025, in terms of both percentage market share and absolute numbers, includes: 1 million, 5%, 800,000, 1.5 million, 10%, 1.5%, 1 million or 6%, 10%, and 2-3%. The sources of these numbers (in scrambled order, to protect the innocent!) are the World Energy Council, EPA/NHTSA, Navigant, Bloomberg, the Electric Vehicle Technology Center, the UK government, JATO Dynamics, the IEA, and UBS.[72] We'll advise our readers to make up their own minds and come up with their own forecast: you are as likely to be right as any of these folks. And keep in mind that the average EV forecast in the past has been over-optimistic. **My own personal guesstimate will be for 5% of US retail light vehicle sales in 2025 to be either PHEV or BEV.** (I will leave myself an out: if there is a geopolitical event (e.g. some rebel group sinks a tanker) and oil prices spike, this number may be much too low. Also note that "retail" qualifier: see the Mobility Service section, below, as regards *fleet* sales of EVs.)

[71] From "An industry in cruise control – What's next for the US suppliers?" by Thomas Wendt of RB, OESA meeting March 27, 2014.
[72] Collected by the author by online searches of public data, in August 2016.

So what will this mean for dealers in 2025?

- EV sales will probably not make or break any dealership over the next ten years, since even optimistic forecasts top out at about 10% of sales by 2025. And if the trajectory of growth changes, dealers will have time to adjust (e.g. by hiring specialist sales people and service techs).
- To the extent EV sales grow, dealership fixed operations may decline, because of the expected lower maintenance costs expected, as discussed. However, note that these lower costs only apply fully to BEV, not PHEV, which reduces the impact. And also note that the track record of EVs on the road to date (as recorded by Edmunds and NerdWallet and others) often shows only a modest reduction in maintenance and reduction costs. So if only 5% of new sales in 2025 are EV, and only half of those sales see significantly reduced service costs, and of those the reduction is only 30-40% or so – service managers will not have to lose much sleep.

Does this mean dealers should not focus on EVs? Actually, we do not think so. For one thing, the public image impact of EVs far exceeds their actual sales impact, so that a dealership that wants to be seen as cutting edge should probably consider displaying and actively selling at least some EVs.

But more importantly, to the extent dealers do not fully recognize EVs as an important and growing market, they are handing rhetorical ammunition to a range of new entrants. That is, various groups (Tesla, the Sierra Club, UC Davis, to name just three) have made high-profile assertions to the public that amount to saying "dealers - meaning ICE dealers - cannot sell electric cars." The Sierra Club asserts that (especially outside California) dealers don't stock enough EVs, don't display them when they have them, don't keep them charged up for test drives, don't provide enough information to customers about EV rebates and tax credits, and lack data on charging networks.[73]

To the extent dealers reinforce the perception, that they are not focused on these "cars of the future," they give new entrants (and interested legislatures and regulatory agencies) more *rhetorical support for these entrants' demand that they be allowed to sell direct*. After all, these new entrants can then argue, "Since dealers can't or won't sell our cars, let us find another path to market."

Virtually every reader of this report knows that dealers are economic animals, *and when EVs become demanded by customers, dealers will sell them*: there is no ideological bias here, only an economic shortfall. But if traditional dealers wait for the time when EVs will be profitable to handle, they may find that it is too late, and that other sales channels have already taken over the business. **Therefore we recommend that dealers would be advised to take a good look at stepping up their participation in the EV game, for the benefit not only of themselves and of their customers, but for the American dealership industry as a whole.**

[73] "Multi-state Study of the EV Shopping Experience," by M. Lunetta and G. Coplon-Newfeld, Sierra Club, 2016.

6. How will they make their money?

The business model of the typical dealer in 2025 will be very different from that of the typical dealer of 2005, or even 2015, in several ways, each of which is the result of trends already under way.

First, the shift from margin to volume will be complete.

With the expansion of the internet and the information that it gives consumers, car buyers have been able to identify and capture most (and in some cases all) of the new-car gross margin that used to be the bedrock of dealer profitability. OEMs have increased their below-the-line payments to dealers to offset this collapse in margins, but only to a limited extent: most of our interviewees felt that such payments offset no more than 20-40% of lost margin. As a result, many dealers no longer make any net profit from their new car department (setting aside for now F&I), leading our interviewees to remark:

- "If I could close the new-car department, I would."
- "I only sell a new car in order to get a used car (the trade-in), which I can make money on."

The offsetting OEM payments are generally tied to achievement either of present-day short-term volume targets, or of customer satisfaction levels – and given that *the point of high customer satisfaction is to generate future sales*, these are also, effectively (long-term) volume metrics. **Thus the dealer's new-car business model has been reoriented from margin-and-volume, to volume alone.**[74] The result is that in truth he or she is no longer a "dealer" (a merchant who sets its own prices by buying low and selling high) but a "retailer" (merchants who sell as many units as they can, at a set price).[75]

Second, negotiated prices eventually fade away.

This is of course already happening: "one price" or "fixed price" or "no haggle" stores were almost non-existent as recently as the 1980s (certainly before Saturn arrived on the scene in 1990). But they are becoming increasingly common, given the access customers have to price and cost data, and given the steady reduction in margins: there just isn't that much money left to negotiate over. This change is moving slowly of course: many customers still prefer to negotiate, for one thing, even if their numbers may be dwindling; many dealers are not convinced this is the right way to go; and many salespeople are unwilling to make the change. And the change is piecemeal: we'll probably be negotiating used-car values long after we stop negotiating over new-car prices. But the trend seems inexorably in this direction, if only because prices are fixed for virtually everything else we buy. (I would like to see what would happen if a Whole Foods shopper asked the check-out clerk what the invoice cost was for a head of lettuce!) If we can't show clear economic or customer satisfaction benefits in negotiating price, we are probably going to stop doing it

(And frankly, negotiated prices are just an artifact of history: it seems that we accept haggling about cars because we haggled over their predecessors: horses. As laid out in Steven Gelber's excellent book on the early days of motoring, *Horse Trading in the Age of Cars*, we argued over horses because every horse was different, and because they were risky (they usually were sold without warranties and without the possibility of refund). When we replaced horses with cars, we stayed with this same system – even

[74] Further (see chapters on rideshare and on autonomous vehicles), if the dealer of 2025 has a higher share of sales going to fleet rather than to retail, there is additional downward pressure on margin: for many of these sales no more than a handling fee is paid. Conversely, more fleet business might lead to more service work, potentially.

[75] More than one dealer told us "It's time to rename NADA to NARA: we're all auto retailers now, not dealers."

as virtually every other good was migrating to fixed prices (led by department stores such as Macy's and Wanamaker's in the late 1800s, according to Gelber). Maybe, a century later, it is time to put negotiated prices out to pasture, just as we did with our horses.)

Third, the P&L will continue to turn upside down: service leads, the rest follows.

The new-car department can no longer generate enough profits to keep the average store viable.[76] Used-car margins remain good (as it is harder for the internet to commoditize used units, each of which is at least slightly unique) but are under pressure as every dealer (franchised and independent) and as interlopers both old (CarMax) and new (Echo Park, Beepi, Tred) see these margins, and jump in to capture them. Finance and insurance earnings are under pressure as well, in part due to tightening regulatory stringency (and to intrusion by online interlopers: see our IT discussion). Collision repair (body shops) has already been abandoned by many dealers. **This leaves the service department (retail parts, wholesale parts, recalls, warranty work, customer pay work, etc.) to increasingly carry the weight.** Interviewee comments summed the trend up:

- "It's time for dealers to stop watching SAAR[77], and start watching VMT.[78]"
- "In the future, it will be service in front, sales in back. The tail is now wagging the dog."

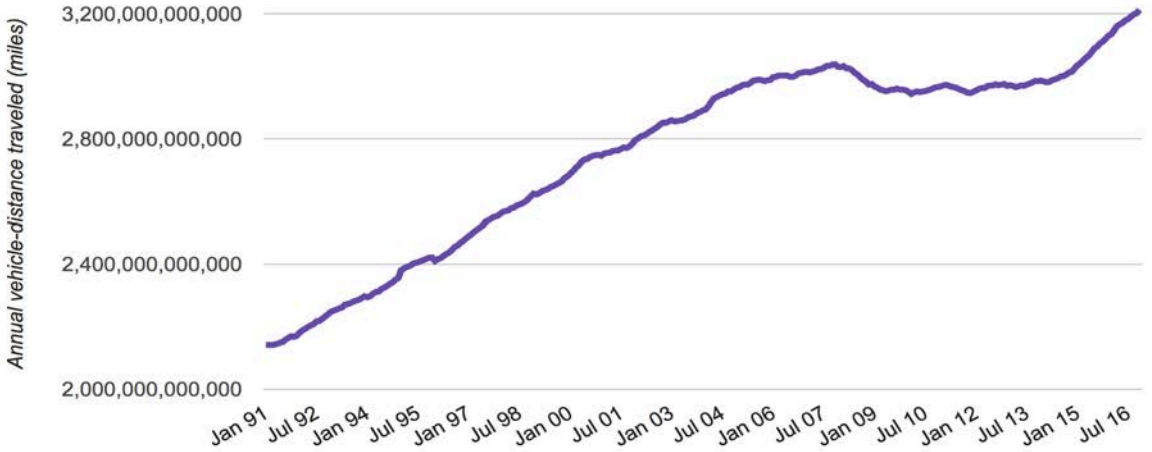
Thus by 2025 we may see fixed absorption levels well above 100% as typical – as they already are at HD truck stores. Dealers may see this as a very steep path to climb, since many service trends are negative: improving car quality has driven warranty work sharply down, and trimmed back customer-pay volumes as well, and with better reliability there has also been a shift from higher-margin repair work to lower-margin maintenance work. The days of 75% labor grosses may be ending: one interviewee expected 50% to be more likely by 2025. But there are many positives about the service market:

- Better-quality cars last longer and so generate more years of service work, *if* the dealer can retain the customer.
- Service volumes lag sales volumes by several years, so the strong vehicle sales rates since the Great Recession should drive some strong years of service volume in the next decade. Therefore – please take note!—our concern about dealers' service performance is more focused on the years *after* 2020 than on those before.
- Dealers' share of the entire service market is so low, that even if that market does not grow much, even a small gain in share can dramatically boost service sales per store. With a total aftermarket sized at about $250 billion or more, and with dealers' share of that at perhaps 30% (and falling: it was closer to 35% 15 years ago), clawing back just one point of share from the independents is worth $2.5 billion, or perhaps $150,000 in service revenue per store.[79]
- With increasing complexity of cars, we seem to have moved into a state of "permanent recall" (and recall work goes directly to dealers), and with broader sharing of parts across car models (by OEMs seeking cost savings), recalls on average are larger than ever before.

[76] For the typical or average store; there will always be a place for specialized high-sales low-service dealerships.
[77] Seasonally Adjusted Annual Rate (of car sales)
[78] Vehicle Miles Traveled: currently running about 3.2 trillion miles per year in the USA, as tracked in the Federal Highway Administration's monthly "Traffic Volume Trends" publication, at http://bit.ly/2ciZ6xI
[79] From various issues of the Auto Care Factbook, from the Auto Care Association, Bethesda, MD.

- Even as we expect a flat SAAR, VMT has resumed growing (what happened to so-called "peak driving?"), after a setback during the recession (exhibit). And VMT drives service.
- The increasing penetration of telematics and predictive diagnostics should in theory give dealers a better shot at the service customer, to whose car they can directly connect.

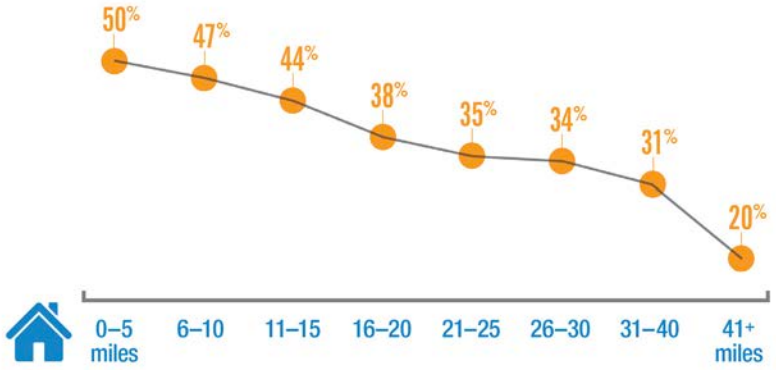
Total USA VMT, 1991-2015



Source: Yonah Freemark,[80] from FHWA data

But this revenue – and its profit stream – will not come to dealers automatically. For one thing, dealers raised on warranty work have to improve service efficiency, especially to compete in low-margin maintenance work.[81] But most importantly, dealers must figure out how to become more geographically convenient for customers: for every dealer location out there, there are more than ten independent repair facilities, from a quick-lube, to a tire store, to Joe's Garage. And, as Cox data shows, the further from the dealer a customer is, the less likely she is to return to the dealer for customer-pay service work (exhibit):

Returned to Dealer for Service in Past 12 Months Based on Distance from Dealer (New Buyers)



Source: Cox Automotive, 2016 Maintenance & Repair Study[82]

[80] See The Transport Politic website, http://www.thetransportpolitic.com/databook/
[81] It is especially critical to be profitable in low-priced maintenance work, as there is some evidence that customers develop their views of a dealer's price competitiveness from the maintenance menu, since it is hard to price-shop complex repairs. Thus if a dealer wants to capture high-margin repair work, they need to first win lower-margin maintenance jobs.
[82] Also from the Cox www.dealerlearningcenter.com website.

This means dealers and OEMs together must solve the "satellite service" conundrum. Our interviews revealed that dealers and OEMs alike were united in believing that being able to locate stand-alone service facilities closer to customers' homes would be critical to driving more service revenue. As one interviewee told us, "In a perfect world there would be two service points for every sales point." But dealers and factories were completely at odds on how to fix the problem. OEM interviewees said they were in favor of detached service points, but that dealers and franchise laws blocked them;[83] dealer interviewees told us that the problem was that the factories would not grant approval for these sites, or that other dealers would fight them, as territorial encroachment. There are some ways around the problem at the margin (e.g. if the service point is unbranded it is much easier to open), but in our view it is clear that the squabbling has got to stop, and the way cleared for dealers to build hundreds if not thousands of service points.

Fourth, we will have a new "shop."

In addition to the new, used, F&I, service, and sometimes collision shops, we have now the "OEM payments" shop. Obviously this is not a separate division in reality, but as the Auto Team America survey in particular noted, for the dealer of tomorrow—and even today—incoming OEM payments for participation in any number of sales and other incentive programs make the difference between profit and loss for many dealers. Increasingly dealers will have to manage this "shop" as actively as they manage all the rest, monitoring the 5 or even 10 incentive programs their factories offer (or impose), to ensure they are claiming the full dollars due them, and to ensure they are pricing vehicles with these payments in mind.[84] This is one more way in which the dealer is becoming a retailer or even just a company store: through increasing dependency on the *supplier* (the OEM) versus the *customer* for profitability. Given the increasing importance of these incentive programs, we'll pause here for a sidebar commentary on how they are designed and operate… and can fall short.

A Comment on Factory Dealer Incentive Programs

The purpose of this report is to look at the world dealers may face in 2025, about a decade ahead. Therefore, it is not appropriate for us to spend much time on short-lived present-day issues, such as the latest OEM sales promotion schemes, and how they may affect dealers and customers. On the other hand, consider this paragraph:

"Ford encouraged dealers to sell more cars by offering them attractive high-volume incentives. Dealers who sold more than 150 units a year obtained vehicles at 25% below the manufacturer's suggested retail price, while dealers selling fewer than 150 a year paid 20% below MSRP. To somewhat reduce the penalty on small dealers, Ford also offered a year-end rebate of 5% to a dealer selling 50 to 150 cars, a rebate of 3% for selling between 25 and 50 cars, and a rebate of 2% for selling between 15 and 25.[85]"

[83] However, our consultation with dealer attorneys revealed no clear evidence that franchise laws "block" satellite service. As one wrote to us: "At most, an offended dealer may make arguments about the market already being served well by existing outlets, but with dealers having a minority of service work anyway (versus the aftermarket), it's hard to see how this would succeed." Of course, the threat of a suit can by itself deter a dealer from trying.
[84] Unfortunately this development reminds us of a trend in the medical field: even small family practices may have on hand a Medicare/Medicaid clerk, whose full-time job is to do nothing except make sure the practice is being accurately and fully reimbursed for all its work under these "OEM programs."
[85] From Making and Selling Cars: Innovation and Change in the U.S. Automotive Industry, by James M. Rubenstein, Johns Hopkins University Press, 2001; page 269.

These multi-level incentives were offered to Ford dealers in …. **1904.** So, given that such programs have been around for over a century, we can reasonably expect they will be around in 2025, and so are worth some discussion.

It is of course absolutely the prerogative of the *OEM* to offer sales promotions, both to their end customers (typically as rebates) and to their sales channels (typically as incentive payments). OEMs may have various reasons for doing so, including:

- To clear older models off dealer lots in advance of new-model launches
- To improve the value of a model that turned out to have less market appeal than expected
- To adjust prices to match different buyers, either over time (e.g. an OEM may discount a model a year after launch, when demand for the "hot" new product has cooled) or over customers (e.g. in a state with many military bases, discounts for veterans may have special power)
- To keep up with rivals (e.g. if one OEM has a Labor Day sale, those who do not may lose share)
- And for other reasons.

And it is of course absolutely the prerogative of the individual *dealer* to negotiate with the OEM over the terms of the promotional payments that the dealer receives: let's face it, arguments over prices and margins probably began when the first caveman bought a few goats to bring back to his tribe for resale.

So there has always been tension between OEMs and dealers over this matter. To go back in time again:

"The company started its war on [dealer] price-cutting early on, when it found that some distributors had circumvented the company's strict list-price policy by giving discounts to individuals. In 1911 and in 1913, the factory sent warning letters to all branches to stop under-pricing so-called demonstrators that had not in fact been used to demonstrate rides to customers. Any dealer who sold a Ford below list … was 'nothing but a short-sighted bungler and a fraud," charged the management in Dearborn."[86]

However, the intensity of this bickering and arguing should be easing, and should continue to ease, due to changes in the economics of car sales. That is, when new car margins were high and variable, dealers often could maximize their profits by selling *fewer* cars at high margins, rather than by selling *more* cars at lower margins – which would conflict with the factory's desire to sell as many units as possible, since the OEM makes its money purely on volume. Nowadays, with margins that are both low and hardly varying across stores, dealers are increasingly focused on volume only, and so are more aligned with the OEMs. More than a few dealers, in fact, told us that they feel that the worst days of dealer/OEM strife are behind us.

[86] Gelber, Horse Trading in the Age of Cars: Men in the Marketplace, The Johns Hopkins Univ. Press, 2008, page 60.

That does not mean that OEMs do not, from time to time, still make poor decisions in the design of dealer incentive programs. While we could go into immense detail on this subject, we'll focus here on the worst type of incentive design error, that which damages the relationship with customers.

One example (referred to briefly in our Rural Futures chapter) is the type of incentive program which is – inadvertently or not – tilted against smaller dealers (e.g. via disproportionately large enrollment fees for smaller dealers, or via allocation practices that make it inherently harder for smaller stores to hit their targets[87]). To the extent smaller dealers are excluded from these programs, their customers do not benefit equally with customers who happen to buy from larger stores. And it makes no sense for OEMs to penalize customers according to which dealer they buy from.

A second type of incentive design error is even more pernicious. This is one that acts directly against the modernization of the car retailing process that dealers and OEMs alike have been working toward for years. And this error, if it persists, will lead to lower customer satisfaction (today, tomorrow, and in 2025) than anyone wants to see. We are referring to so-called stairstep or "escalating bonus" incentive programs. In theory (and legally), there is nothing wrong with rewarding dealers with bonuses as they sell more and more cars. But as these (often very large) bonuses are paid against monthly sales performance, and are not paid unless the triggering "stairstep" is crossed (that is, a dealer with a 100-unit target may get a $50,000 bonus at 101 units sold, and $0 at 99), in practicality they are corrosive to customer trust in the OEM and in the dealer.

How does this happen? Well, a customer who comes to the store when it is 2 units and 1 day away from the month's close—and a massive bonus—could receive an enormous discount, relative to the customer who stopped in just a week earlier. A dealer who in good faith tells a customer on March 5th that his best price is $25,000, will be hard pressed to explain why this best price is $20,000 only a few days later. This is not good. All the trust that OEMs and dealers have tried to build up over the years, from the Saturn initiative, to "no-haggle" pricing, to spreading commitments to transparency, are swept away in an instant by this kind of program, as customers see once again prices inexplicably, even randomly fluctuating. In effect, this kind of program design error only slows down the transition from the "horse traders" of 1925 to the "retailers" of 2025 – a transition that OEMs themselves otherwise usually support.[88]

In closing this comment, we can't in good faith lay out the problem without offering up a solution. As stated before, OEMs have every right to run sales-incentive programs, so dealers who are unhappy with a given program owe it to their OEMs to suggest something better.

Thus if a bad program penalizes small dealers (and their customers) through no fault of their own, a better program would avoid that (by easing small-dealer entry to the program).

[87] For example, one late truckload of cars hurts a dealer that only sells 10 cars a month much harder than it does a store selling 100.
[88] There are other issues with these programs, including complexity (such that the dealer devotes more time to managing the multiple programs she or he is often enrolled in, than managing the business), volatility (such that the end of each month sees a frenzy of activity that is both pointless and costly), and unproductiveness (as it is unlikely that these programs stimulate permanent gains in market share, versus just shifting sales from one month to another). However, as these are primarily tactical problems, we have chosen to address in depth only the longer-term strategic problem of these programs' tendency to destroy customer trust.

- If a bad program destroys customer trust, a better program would rebuild it, e.g. by rewarding good behaviors (inputs) by dealers, not by rewarding sales gains (outputs).[89]
- If an OEM can prove a link between better employee training and customer satisfaction, then it can pay bonuses to dealers who do more training.
- Etc.
- If an OEM can prove a link between higher inventories and higher sales rates, then it can subsidize larger inventories.
- If an OEM can show increases in salesforce productivity through use of mobile apps, then it can reward dealers who roll out such apps.
- And certainly, periodic, limited sales bonuses will always have their place, if only to keep customers paying attention, and to keep sales people engaged. But in the long run to 2025, dealers and OEMs are *already* more aligned towards volume and customer satisfaction goals than ever before, and so there really is no need at all to disrupt this alignment with monthly injections of cash, that distort sales rather than grow them, and in the process destroy the customer trust that the industry has worked so hard – together – to grow and nurture.

Fifth, human resources are evolving from expenses to investments.

If in the past new-car margin was everything, then the sensible way to get it was to hire aggressive "alpha male" salespeople, and motivate them with a cut of the margin they could achieve. High turnover was fine, as no one was trying to build a long-term relationship with the customer, only move the next unit at the highest gross possible. Career paths hardly mattered to the successful salesperson, who saw his (it was almost always a male) validation as an employee not through titles or job rotations, but through pulling down ever-larger paychecks.

This has changed with the shift away from new-car margin. If there is little or no margin to start with then there is less reason to negotiate prices, and in a no-haggle environment,[90] no point in paying a margin-driven commission. Further, if the customer has already done hours of work in online shopping, then she or he enters the store pretty much pre-sold, and there is less need for aggressive selling skills on the part of the salesperson. If the salesperson is as much devoted to customer satisfaction (leading to future sales) as to current sales, then she or he needs new skills, primarily in matching each customer to the vehicle best suited to him or her. This kind of person, with these different skills, tends to be less a commission-driven "hunter" and more a salary-driven "farmer,"[91] seeking different rewards from work: shorter hours, more predictable pay, and a future career path.

Therefore the dealership of tomorrow is moving from seeing front-line personnel as disposable, variable cost, short-term expenses, toward seeing them as more valued, fixed cost, long-term investments. This is not because the dealer is somehow abandoning her or his economic interests, but because objective

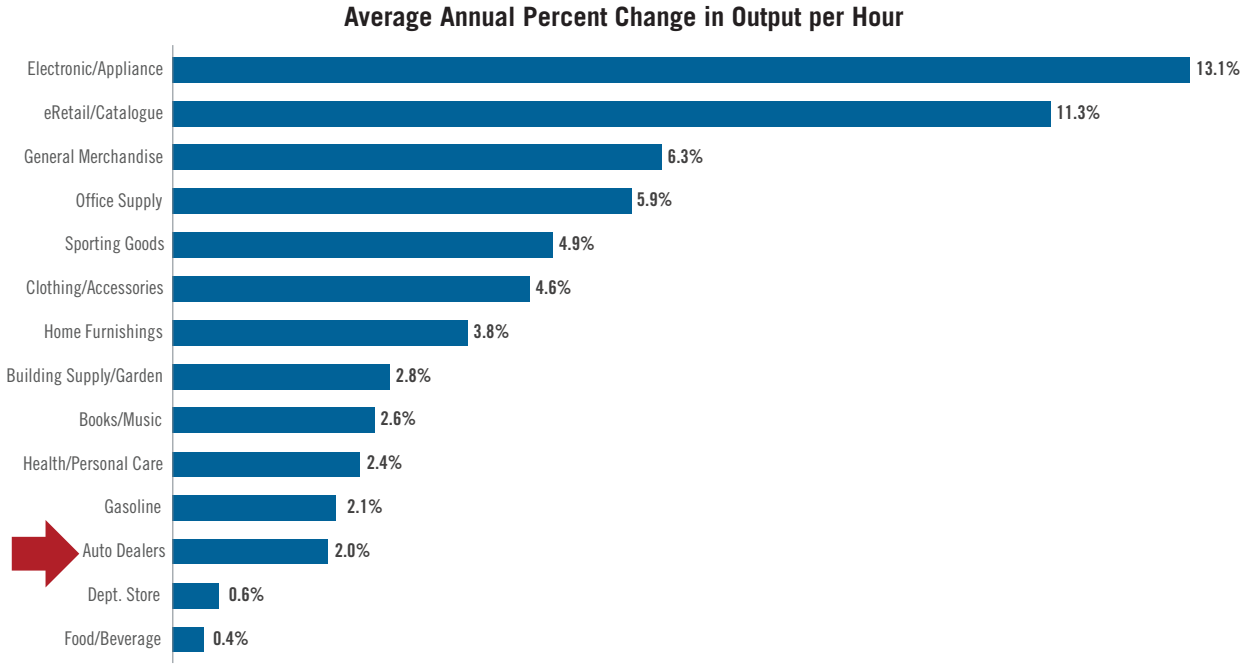
[89] And these sales gains will tend to be temporary anyway: no dealer can continually pull volume from the next month into this one, or continuously boost market share. Indeed, we met dealers who periodically would exit these programs, and allow their sales to fall, just so that they could re-enter the program again later at a "reset" lower sales level, where the bonus targets would be easier to (resume) achieving.
[90] Or any of its various flavors, such as fixed-price, one-price, negotiation-free, etc.
[91] Please note my use of the words "less" and "more:" even in a situation where a salesperson's compensation is more based on fixed salary, there will always be a role for variable commissions! See for example CarMax.

economic realities make the new "kinder and gentler" approach much more logical**. Our interviewees were virtually unanimous in asserting that this shift from "people as expense" to "people as investment" must take place.** It will be hard to do for many dealers, because a great strength of the dealership's P&L has always been its ability to slash labor costs in a downturn: even in the Great Recession NADA data shows the average store was still profitable. But the world has changed and this model no longer suits it as well.

Sixth, efficiency and productivity are moving to the fore.

And this new HR model is right for the new economics: **if we no longer can drive margin UP, we must drive costs DOWN, to maintain the bottom line**,[92] and that requires hiring skilled individuals who are comfortable with information technology (which can streamline processes and thus reduce costs), who can multi-task (to reduce headcount and thus reduce costs[93]), and who can innovate (to come up with cost-saving ideas). These people cost more, but they generate productivity savings disproportionate to their higher cost.

And we *must* have higher labor productivity in dealerships. Since the 1960s – half a century ago!—the rule of thumb has held: "ten new units per salesperson per month." It is a rare industry that would tolerate such stagnant productivity growth. Indeed, if we compare new-car retailing productivity to that of other retailers, we see that consistently since 1995 dealership productivity growth has lagged the average (see exhibit and also this footnote.[94])



Source: US Bureau of Labor Statistics

[92] As the 2015 McKinsey study for NADA made clear, while factors like brand choice and store location have impacts on dealership profitability, the biggest (60% of total impact) driver of superior profitability was operational excellence. ("Fast forward: How US auto dealers can drive sustainable economic performance in the digital age," by Ellencweig et al., McKinsey & Company, April 2015.)

[93] As one dealer told us: "A decade ago I moved to 'one price' – now I am moving to 'one person.'" We do realize that merging sales and F&I is not easy, and may not even be the right thing to do for many dealerships, but with better processes, people, and IT, it is becoming more and more feasible. The days of time-consuming low-grade F&I tasks such as filling in multiple loan applications, for faxing to several local banks, are long gone.

[94] Car dealer annual productivity growth in 1995-2001 was 3.5% (versus the broad retail average of 4.2%), in 2001-07 2.1% (versus 3.8%), and in 2007-2013 0.3% (versus 1.6%). From Brian Ratchford, "Retail Productivity," in Handbook on the Economics of Retailing and Distribution, edited by Emek Basker, Edward Elgar Publishing, 2016.

Only personnel with higher skills can change this flat trajectory: just running them harder will not work (we've been trying that for decades). As Jared Hamilton of Driving Sales said to us: "Dealerships today are actually *over-managed* – but *under-led*." **Managers** focus on the short-term, on standard metrics, and do well when the environment is stable – but in an environment changing in the way ours is, we need **leaders**, who focus on the long-term, who set goals above and beyond rule-of-thumb metrics, and who are eager to capitalize on change. So for example, the hero in the store of 2025 will not be the salesperson who broke his all-time record, but the manager who found a way to take 30 minutes of tech labor out of the used-car reconditioning cycle, or to replace expensive TV advertising with low-cost social media marketing.

Seventh: Other shops, other challenges

Throughout this report we have focused on the new-car and the service sides of the store. The former (new sales) drives topline revenue and the economics of the other shops, within limits: a new-car sale can trigger OEM payments and F&I revenue today, a sale of the (traded-in) used car in a few weeks, and, years later, business for the service lanes and the body shop. The latter (service) increasingly contributes to the bottom line of the store, whereas previously it was run almost as a sideline. But of course the other departments contribute to the overall P&L, and so they deserve commentary here.

- The F&I department is a major economic engine for the dealership, both via the vehicle financing income it generates, and through its sale of supplemental products such as service plans. Looking ahead, it is hard to see F&I's contribution to the bottom line *growing* (as almost every dealership has upgraded it F&I processes and management over time), and there are at least two factors which could result in its *shrinking*. First of course is regulatory pressure on the F&I department, which has been and continues to be intense, as government agencies consider this area to be problematic for consumers. We will not weigh in on the politics here, or attempt to predict the trajectory of state and federal regulatory activity over the next decade, but objectively one has to conclude that this contentious situation will persist. A second issue in the area of F&I is competition from financing sources from outside the industry (that is, not traditional banks, credit unions, or OEM captive finance arms, all of which coexist with dealers). These include buying services or pure online lending entities (akin to Lending Tree). In the past it has been difficult for these entities to peel off the financing transaction from the car transaction, as the dealer is best positioned to win the customer's F&I business. That being said, increasingly advanced IT apps and increasing customer comfort with online transactions are only making it easier for these entities to challenge the dealer's primacy. Dealers of course have powerful allies in this competition, as the incumbent banks and captive finance firms also have no desire to see this business migrate away.
- As for the used-car department, traditionally it has generated higher percentage margins than the new-car shop (if lower total dollar margins, due to the lower price of used cars), as used cars present more profit opportunities. As the old saying goes, there are three ways to make money in used cars: buying smart, reconditioning smart, and selling smart. We certainly see used cars as continuing to make major contribution to the dealer's bottom line, but as the chart we shared earlier shows, margins in used cars are eroding, as competition heats up. This competition comes both from other dealers (as more and more come to realize the profit potential of used cars) and from new players such as Beepi, Tred, Carvana, and many more.
- These new players are not to be taken lightly of course, but seem to be focused more on the "convenience" segment of the buying public (which doesn't feel it has the time to go to a dealership) than on the larger "value" oriented segment. But it is hard to see how these firms grow beyond the price-insensitive segment of the market, since while they generally (but not

always) reduce asset intensity by not owning inventory, they swap the money saved there for higher sales expenses elsewhere (e.g. by offering home delivery). For now, despite their claims as being something wholly new, they look more like the brokers the industry has always dealt with, even if they are now on-line as opposed to off-line. Forward-looking dealers will keep a close eye on these services, and if they gain much share they can certainly emulate them as needed.

- Finally, the collision-repair shop remains problematic for many dealers. They incur challenges from dealing with insurance firms, to meeting stringent environmental regulations, to hiring specialized labor. Many dealers have concluded that the profits available are not worth the effort (particularly small dealers, who cannot easily get the body shop up to minimum economic scale), especially as the significant real estate it takes up can be redeployed for regular service bays. (Recognizing this, many dealers run off-site collision facilities.) Longer term, increasing penetration of ADAS should lead to lower collision rates, and thus less revenue for the body shop. All in all, we cannot see collision-repair revenue growing for the average dealer, and expect that for that dealer the more lucrative route to participating in collision work is by wholesaling sheet-metal to independent body shops.

All in all, it seems unlikely that dealers will be able to depend on these three operations to *grow* profits such as to recover those lost to falling new-car margins, even though of course they should be able to *maintain* them as important profit centers. **Therefore we come back to the same conclusions as before: total store profits will depend more and more on growing new-car volume (not margin), managing OEM payments, and increasing service revenue.**

One likely result: the rich will get richer, and the poor poorer…

Our interviewees were again unanimous that the difference between high-performing and low-performing dealerships would widen, as a byproduct of all these changes. The dealer who makes the transition from margin to volume, for sales to service, and from people-as-costs to people-as-investments, will see reduced costs and thus better profits. A virtuous circle will form, and the stronger dealer will pull ahead of the weaker. "It's more Darwinian, but it will happen," as one interviewee put it. And the consolidation trajectory discussed earlier will only exacerbate this trend: as the more successful stores will be better able to afford to buy out rivals, they will pull further ahead, by using scale economies to turbo-charge their application of best practices.

And one *less* likely result: entirely new business models emerge.

With all this change swirling around the dealership of tomorrow, there has been speculation, mostly from outside the industry, that dealers will need to move to an entirely new business model. In the eyes of these pundits, shifting profits from new to used, or from margin to volume, is simply rearranging deck chairs on the *Titanic*. In their view, dealers will need to latch on to new realities such as mobility services or short-term ownership, and reinvent themselves completely. Thus a dealer might become the local operator of a mobility service firm, something like an Uber franchise.

But while these exhortations are exciting they remain distressingly vague: we haven't seen anyone to date spell out exactly *how* a dealership might get into short-term car rental (for example), and how it might be advantaged in doing so. Dealer locations are not especially convenient as urban rideshare centers, they don't have the massive IT resources the new mobility companies do, etc. In some respects these ideas seem similar to failed new business model concepts from the past: remember when Starbuck's wanted to become a music downloading hub? Or when Barnes & Noble's Nook ebook reader was to transform the

company? We are not at all sure how any of these new vaguely-specified business models would work for car dealers. We are not opposed to the idea – we just haven't seen it yet.

That being said, we completely agree that dealers will be able to *expand and adapt* their current business models to *support* developments in parallel industries. As discussed in our Mobility Services and Autonomous Vehicle chapters, someone needs to maintain, sell, remarket, and otherwise manage the fleets of cars these industries may generate. The profitability of fleet maintenance of a few hundred GM/Lyft cars may not be especially high, but it is something dealers can do. An autonomous car may not crash very often (reducing bodyshop revenues), but its highly-advanced sensor array may periodically need the precision alignments that only a well-equipped authorized dealer can execute. Some dealers might choose to exit the retail business altogether, close the (expensive) showroom, and become purely a fleet sales-and-maintenance operation.

But overall, **we do not see many dealers completely re-inventing their business models** (defined as buying, selling, maintaining, and financing cars)—though we can absolutely imagine the majority of them adapting and evolving those models for a different kind of future, as this report lays out.

In summary, if profitability in the future might be a little lower, it will be driven as much by service as by sales (and satellite service facilities may be a requirement for service revenue capture), and more by cost control than by margin expansion – with all this enabled by human resources with different skills and compensation structures than have traditionally been the case. Because of all these changes happening at once, we believe the gap between stronger and weaker dealers will widen (as the game shifts from managing to metrics to leading to goals), even though we do not expect widespread revolution in the dealership business model – only evolution.

SPECIAL TOPIC
Chapter F: Autonomous Vehicles (AVs)

If there is an automotive topic that gets more press coverage today than AVs, we are unaware of it. It seems that every automotive pundit, every policy think tank, many engineering professors, and every consulting firm has published a report or white paper on our AV future. In fact, I am pretty sure there are more AV reports in circulation than there are AVs on the road themselves.[95] So AVs pretty much define the concept of "hot topic."

But when we asked our interviewees about AVs, they were mostly silent. They gave a range of reasons for their reticence, such as lack of expertise, inability to predict what would happen, confidence that whatever happened would be a long way off in the future, and complete bafflement as to how that would affect dealerships. Yet the topic is crucially important: even if one is not an AV "believer," one has to admit that billions of dollars (and thousands of press releases) are being thrown at AVs – at the cars, the sensors, the software, the telecommunications infrastructure, and even the rules and regulations (while the lawyers are sharpening their knives so as to be able to dissect a whole new world of liability issues!). So we felt compelled to tackle the issue, and see what it might mean for dealers in 2025, but in a different way: as our interviewees were mostly quiet on the topic, we needed to consult different sources, and so off we went to sift through all the best conferences, reports, and articles we could find. We are not sure we came up with a prediction *per se*, but at least a list of perhaps useful assertions: the best course may be to read them, and then come up with your own point of view.

Assertion 1: Autonomous vehicles are inevitable. Given that cars are fast-moving heavy lumps of metal, they are inherently dangerous. As researcher Takahiro Fujimoto has said, "Cars are born with original sin." They kill people. Accordingly, there is no reason to expect, as hardware and software continue their inexorable improvements, that these won't add capability to the vehicle – just as elevators long ago lost the human operator, airplanes add suites of piloting aids, and trains rely more on networked controls. So in a way the entire AV debate is not about *if*, but about *when* and *how*.

Assertion 2: AVs are already here.[96] Actually, yes they are and no they are not, and here is where we run into the great Autonomy Definition Debate. If we define as "autonomous" a car that does some of the driving for you, we've had those since the first ABS system went in – because the ABS computer takes over each wheel's braking action, in a way that no human ever could, in order to preserve steering control during panic stops. And since then we've added traction control, lane maintenance, active cruise control, and many more intelligent features. Thus at this point any OEM can label almost any car as "autonomous" and get away with it – and they do, as anyone trying to keep up with all their PR is painfully aware. But a fully autonomous car—one where you jump in, say "Take me to the beach!" and then sit back for a nap – is obviously nowhere near reality yet. (As is the ultimate evolution of an AV, the *driverless* car – one you can send empty to the beach, to pick up your kids for you.)

[95] Your author's laptop hard drive contains over 500 AV reports, articles, and forecasts…

[96] Actually, they've been here for about a century. These early AVs were called "horses." From Gelber, op. cit.: "Most Ford [Model T] owners were not the kind of people who would hire chauffeurs, so they needed to learn to drive their new cars for themselves. Dealers discovered that often the only way to make a sale was to give driving lessons to the new owner. Doctors who made house calls were a prime market segment, and John Eagal, a Ford dealer in Iowa, found that he frequently had to teach them to drive by going with them on their patient rounds. **Eagal remembered that the doctors complained that driving a car demanded too much attention: they were used to their horses navigating the routes by memory, while they attended to deeper thoughts.**"

As an example of the confusion these definitional issues lead to, see the Volvo DriveMe AV pilot program, set to launch in 2017.[97] Volvo can announce, absolutely correctly, that this is a real-world autonomous vehicle demonstration, on real roads that real people take to work every day. But the test will be limited to Gothenberg in Sweden only; and to only one hundred cars; and to driving only on a pre-determined 50 miles of roads; which are multi-lane highways with controlled access and no pedestrians. So while Volvo is not misleading anyone, confusion about the meaning of autonomy means that the press can write that "Volvo has autonomous cars," whereas unless you are one of 100 drivers on a specific 50 miles of highway, you are not going to be getting yours any time soon. So, beware of debates about AVs that do not clearly specify what kind of autonomy they have in mind.

The industry deals with this issue by defining levels of autonomy, and while there are various schemes for these, we'll use this system in this report: level 0 means a car with no autonomous features, level 1 means we've got single-function features installed (e.g. ABS), level 2 means multi-function systems are present (e.g. ESC, which acts on both brakes and steering), level 3 means the car can actually drive itself under controlled conditions (e.g. self-parking applications, hands-off highway driving, autonomous operation but only in good weather, etc.), and level 4 is the end state, where the car can go anywhere you tell it to, under any conditions.[98] We'll call levels 1 and 2 "assisted" driving, because here is where the familiar ADAS abbreviation applies (Advanced Driving Assistance Systems), and levels 3 and 4 "autonomous" driving.

Assertion 3: No one knows anything… but they are *very sure* about it. AV enthusiasts claim benefits for these cars that stop short only of curing cancer or generating free energy. They indeed have the potential to dramatically reduce road injuries and fatalities (since many of these are caused by human error, to which computer control is in theory immune), and they might reduce congestion (as a computer-controlled car can in theory safely tailgate in a way humans never could, freeing up space on the roads), and they conceivably might reshape cities (if you can send the car home once you get to work, can't we replace carparks with … parks?).

On the other hand, one can argue whether it makes sense to spend vast amounts of money to get to autonomous driving, based on the improvement in safety that in theory would result. Some 35,000 people die on the roads in the USA every year, which is of course 35,000 too many. But consider that at least one ADAS supplier has argued that we could eliminate 80% of those fatalities just by installing the ADAS systems *we have now* across the entire fleet (this is "assisted" driving), for probably 20% of the cost of going to full autonomy. And further, we are asking a huge amount of autonomous cars if we really expect them to eliminate road deaths, without the assistance of humans. On the one hand that 35,000 is at once too many-- but on the other hand it is very few: that is one fatality for about every 100,000,000 miles driven in the USA, and we don't yet know of a computer system that can do everything right for such a long stretch of uptime.

In any case, given that we have so little real-world experience with these vehicles, predictions about their penetration must rely on models, simulations, surveys, and other forecasting tools. And the forecasts are all over the map. As a few examples:

- Rowe sees 100% market share of AVs in America by 2050;
- Hars 90% of "all trips" by 2030;

[97] See http://bit.ly/2dV7NL8

[98] And again, some people would add yet another level, of the driverless car. Here I can send the car off empty, to go retrieve my child from school and bring him back, for example. (We don't know what the car's AI (artificial intelligence) would do if Junior refuses to get in the car…)

- Litman sees 50% by 2040;
- Lux Research expects level 3 vehicles at 10% of sales by 2030;
- BCG sees level 4 at 10% by 2035;
- Navigant 75% before 2035;
- McKinsey (hedging nicely) has level 4 "up to 15%" of sales by 2035;
- IHS expects 600,000 AVs (level not clearly defined) on US roads by 2025;
- while Toyota doesn't expect many level 4 cars at all before 2035;
- and UBS also thinks they will take more than a decade to hit the road in force[99]

A researcher many respect in this field, Dr. Kara Kockelman, sensibly does her projections via scenarios that take into account assumptions about AV costs (because AVs will cost more than non-AVs) and consumer interest,[100] as both of these will affect demand. Her forecast (see immediate prior footnote) is running at – according to what you believe about technology cost curves and the evolution of customer views – 5-15% penetration of fully autonomous cars in American total UIO (units in operation) by 2025. (This is with price penalties for high-level AVs running to $10,000 or more, although no one really knows what the long term additional cost might be.)

To supplement all these estimates, we figured we might as well add one more, and did a quick survey of a dozen AV experts we know, asking the question in this way: "By when will 30% of new-car sales in the USA be level 3 or 4 cars?" The median response was "2030 or later," with heavy-duty trucks getting there five years earlier (since relieving tired drivers of the need to monitor hundreds of miles of straight-ahead constant-speed highway driving seemed a quite useful and more easily achievable goal).

One other reason for the wide dispersion of forecasts is that we have two paths for getting to the AV future.[101] Broadly speaking, one we can call the Great Leap Forward, and the other Steady as She Goes. Google has been the primary exponent of GLF, intending to skip assisted driving and go directly to complete autonomy (maybe even deleting the steering wheel). The reasoning for this strategy is that we cannot on the one hand give drivers more and more ADAS systems, relieving them of more and more driving duties – and then expect them to stay alert enough to control the car when something goes wrong. Toyota and most other OEMs favor SASG, which is a more evolutionary process, of adding more and more "intelligent assistance" to the car, so that the driver is for the foreseeable future still in control, but with a computerized copilot constantly at her or his side.

[99] Most of these forecasts are from "Forecasting Americans' Long-Term Adoption of Connected and Autonomous Vehicle Technologies," by Prateek Bansal and Kara M. Kockelman, University of Texas at Austin, unpublished working paper, April 2016. The IHS number is from press reports (e.g. http://bit.ly/2cj3UTS), McKinsey from an interview with Firm members (http://bit.ly/2cj3Pzb), and the UBS perspective is from Colin Langan's report, "Could Shared-Autonomous Cars Increase Sales?," UBS Securities LLC, June 2016. The Toyota estimate is from the author's personal communication with a researcher who wished to speak of the record.

[100] There are many surveys available about consumer interest in and WTP ("willingness to pay") for AVs, with widely varying results, in part because consumers can't evaluate what they haven't yet experienced. We note with interest IIHS's findings about ADAS systems available now: while almost all consumers appreciate forward-collision warning, many drivers turn off lane-departure warning systems (see http://bit.ly/2cj5chn). Perhaps drivers see the former as life-saving, and the latter as automated back-seat nagging.

[101] Another reason for forecast uncertainty is because we have to make predictions in multiple fields at once, when it comes to AVs. We have to predict how fast the technology evolves (both in terms of performance and in terms of cost), but also how fast consumers might adopt AVs, and also how fast the legal and regulatory environment might evolve to support AVs. As regards that, we have the additional problem that **federal** regulations govern how cars are built, whereas **state** and **local** regulations govern how they are used. Since how an AV will work is built into it when it is designed, AVs automatically collide with multiple regulatory regimes at once. See the work of legal scholar Bryant Walker Smith for the best overview of the legal and regulatory muddle.

The best way, we believe, to reconcile the two paths is to imagine "horses for courses." That is, we can imagine rapid deployment of GLF autonomous cars in controlled environments (e.g. taxis in low-speed downtown urban areas), while in general-purpose settings assisted driving dominates for a long while (SASG). Thus we see Singapore approving trials of autonomous taxis in that densely-populated city, since road speeds there are low (and thus no one gets killed if there is a glitch), taxis are highly utilized for many hours day and night (thus earning enough money to pay for the AV tech), and taxis run in fleets where maintenance and usage can be carefully monitored and controlled. On the other hand, it is almost impossible to imagine a rancher in Wyoming summoning an AV pickup to move livestock around in a trailer—and then go off-road to mend fences. So an executive from nuTonomy, the company setting up the Singapore experiment, can very sensibly assert that on the one hand Singapore taxi fleets may be autonomous within a year or two, while on the other a level 4 vehicle that an individual person could buy for general-purpose use may be 15 years away.[102]

Taking all this into account, we'll assert as a forecast that virtually 100% of new-car sales by 2025 will include high amounts of assisted driving features (projecting a continued steady rise in ADAS installations), with 50% at level 3 (you're able to take your hands off the wheel for extended periods, if conditions are right) and 10% capable of a high percentage of driving at level 4[103]… but with these highly autonomous vehicles being run mostly in fleets (e.g. as taxis, in gated community environments, on campuses, etc.). It is outside the scope of this report, but we can speculate that we might see higher AV penetration in city buses, what with their pre-planned routes and low speeds, and in heavy-duty trucks, with many miles of steady-speed controlled-access highway driving.

Feel free to come up with your own forecasts. But even if you are a diehard skeptic, remember that even if the laws aren't ready, the technology not ready, and the demand not there – we will see these cars if only because so many large corporations (Google, Uber, Tesla, maybe soon Apple and Chinese new entrants) with so incredibly much cash are making so many very large bets on AVs: *supply may create demand* all on its own.[104]

Wildcard: The Elderly and Disabled Market. So much of the AV discussion has focused on *safety* (reducing traffic deaths) and *convenience* (letting you do emails on the way to work), that relatively less emphasis has been on *mobility*. By this we mean enabling automotive travel for those who have lost it or never had it, the elderly driver who has lost her license or the blind man who never had one. AVs hold out the promise to these Americans to be able to get on the road themselves, without depending on the kindness of others to give them a ride, or on often-infrequent or inconvenient public transport. Speaking only of senior citizens for example, we can point out that:

- This is a large market (45 mm Americans over 65, growing to 73 mm by 2030, according to the Census)

[102] nuTonomy co-founder Emilio Frazzol, interviewed by UBS in July, 2016 ("AV Expert: A Look Into the Autonomous Future," UBS Securities LLC).
[103] I've used this wording because I think completely, totally level 4 operation is technically infeasible, even if it works 99% of the time. I am including in this 1% sliver of manual operation cases such as driving across a grassy field to park at the country fair; or over-riding AV control on a side street on Halloween, when no computer could tell a 6-year-old in a ghost costume from a stray newspaper blowing across the road; or cruising a remote arrow-straight road across a Nevada desert, with no center stripe or edge markers.
[104] And incumbent OEMs are falling all over themselves to join in as well, perhaps because they don't want to lose yet another round in car technology, having seen in-car entertainment, navigation, and communications all migrate away to the smartphone…. along with the revenue these applications generate.

- These people are often at high risk if they drive themselves: 80-year-olds for example have a fatality rate per mile driven that is three times that of 50-year-olds[105]
- They are losing their licenses at a high rate: over 750,000 annually, either voluntarily or by DMV revocation, the AAA estimates… and suffer psychological as well as economic distress as a result
- They often have the funds to buy a car that could restore their mobility: the median wealth of families with a head over age 62 is $210,000 (versus $15,000 if under 40)
- And for many of them the crisis is acute: over half of seniors over 65 "live in communities with no public transportation whatsoever"[106]

A low-speed (perhaps limited to 25 mph, to reduce risk) short-range level 3/4 AV might be incredibly valuable to this large and growing group, and thus offer a boost to SAAR as a result.

Assertion 4: Unintended consequences are going to be massive. When you inject this radical a concept – vehicle autonomy – into this complex a system – the US auto industry (which includes individual owners, fleets, dealers, repair shops, insurers, DMVs, gas stations, traffic laws, licensing requirements, road infrastructure, and much more) you really will have no idea what to expect. Does an AV never break the speed limit or make illegal turns, thus bankrupting small towns who depend on traffic fines for income (Americans pay some $10 billion in traffic tickets annually[107])? Will human drivers behave badly and, seeing a car in autonomous mode, gleefully cut it off, because they *know* the computer must let them in the lane (AVs will not be programmed with road rage)? Will hackers or pranksters break into AV computers, at worst to turn off the brakes, or at best to have them honk incessantly? How will society handle the possibility of putting millions of truck and taxi drivers out of work? We'll let you come up with your own additional scenarios, any one of which may alter any AV forecast.

So what will this mean for dealers in 2025?

We've talked about growing penetration of AVs into the fleet by 2025. Now we need to translate this into implications for dealers. The following hypotheses are based on a wide variety of discussions, from the extreme ("One AV can eliminate 10 regular cars") to the indifferent ("It's all hype, ignore them.")

- The continued rise of ADAS and the eventual appearance of AVs will eventually reduce vehicle collisions, and thus accelerate the trend of dealerships to discard in-house body shops.
- To the extent AVs cost more than regular cars (we don't know by how much, but it is likely thousands rather than hundreds of dollars), this might increase dealer margins while lowering sales volumes – but only slightly, as customers can switch to non-AVs if the price is too steep.
- To the extent AVs displace use of mass transit rather than other cars (see the Mobility Services chapter to look at the whole ride-sharing puzzle), sales volumes may edge up – as subway, bus,

[105] See IIHS's A. T. McCartt's presentation to the NTSB Safety, Mobility, and Aging Drivers Forum, November 2010.
[106] "Emerging issues in safe and sustainable mobility for older persons," by Ball, Ross, Eby, Molnar, and Meuser, of the Transportation Research Institute, in Accident Analysis and Prevention, 61, 2013.
[107] J. Bax, "Traffic Tickets Are Big Business," National Motorists Association, 2007.

and light rail riders come back to cars. As one transportation agency executive put it, "The transit advantage may melt away"[108] if high-level AVs become commonplace. If falling ridership bankrupts many public transit systems, what will that mean to lower-income Americans, who depend on cheap public transit and who cannot afford an expensive new AV?

- If we can make AVs suitable for the disabled and elderly, sales volumes may increase fairly sharply, as these customers enter or re-enter the market for cars.
- If it is easier to use an AV car, then we will expect to see more car usage – that is, more miles driven (getting to Yellowstone will be less onerous if Dad and the kids are watching movies while motoring) – and more miles driven means more wear, which is a boost to the service bays, and also means a shorter ownership cycle (as the car wears out faster).[109]
- To the extent a high share of AV sales are to fleets (e.g. taxis), margins may fall.
- Because of the advanced technology in an AV, service work may generate higher revenues (e.g. with each suspension alignment comes a realignment of the sensor arrays), and be further boosted by the independent aftermarket's mostly lacking the expertise to work on these cars.

All in all, we would estimate the effect on dealers of AVs by 2025 (again, excluding the impact of their being used in mobility services, discussed below) as generally positive, for both new-car sales (especially if we can address the car-deprived elderly and disabled) and fixed operations.

7. How will the store change?

Next we discuss how our interviews and research predicted the store itself will change, as the business evolves in the ways discussed in previous chapters. We'll divide the store in two: the physical store and the virtual, or online, digital store. (It shows you how far things have already changed, in that the phrase "online store" would not have been recognizable as recently as the year 2000 or so.)

How will the *physical* store change? *Outside* the store: will BTO grow?

One of the ways dealers add value to the automotive retailing system is by holding inventories of cars. In fact, at 60 days' worth of stock at a unit value of $30,000, there is some $85 billion of vehicle inventory on the ground in the USA. This investment is nevertheless good value for the *manufacturers*: car plants minimize cost by running at steady high rates of utilization, and OEMs can achieve these rates by using dealers as buffers, to build up and draw down inventories as sales demand fluctuates.[110] It is also good value for *consumers*: they have a broad range of cars to choose from on the lot. But on the other hand this "build-to-stock" (BTS) system can have negative effects as well, first because holding $85 billion in stock is expensive,[111] and second because doing so can lead to unhappy customers. Dealers naturally feel pressure to sell what is already on their lots, and thus to persuade customers who can't find exactly what

[108] Jerome Lutin, NJ Transit (retired), in "The Implications of Automated Vehicles for the Public Transit Industry," June 22, 2016 Presentation to the I-95 Corridor Coalition

[109] High-use vehicles like taxis wear out in under a decade, versus the roughly 15-25 year life of personal-use cars.

[110] This should come as news to no one, since as far as back as the days of Henry Ford himself OEMs in the US were switching from company stores and sales agents to dealers, in order to have local businesspeople responsible for financing the creation and maintenance of these buffers.

[111] Even though the cost of financing inventories is minimal right now, due to historically low interest rates, at some points rates will rise. Arguments that inventories "don't really cost anything" because they are financed via floor plan loans are specious, since the cost must be covered somewhere in the system, either by dealers themselves or by OEMs issuing floor plan credits. Further, cars held in stock do depreciate over time, which is another cost.

they want, to take a second or third choice, by offering discounts. In theory at least, the customer would be happier with her or his first choice.

Accordingly, for decades now various analysts have been predicting, or advocating for, a switch from BTS to BTO.[112] It's not that it can't be done: indeed in other countries BTO is more prevalent, as in the EU (see our Europe chapter). But it hasn't been done in the USA, where dealer inventories remain at that 60-day level. To be more accurate, we have evolved here to a middle path between BTO and BTS, a "BFP" (buy-from-pipeline) system, where dealers—enabled by IT—can often find the precise car a customer wants by buying from or swapping with other dealers, or by looking into the OEM build schedule and altering allocation requests accordingly. Even with OEMs improving plant flexibility to the point where a BTO car can be delivered in a couple of weeks in some cases (versus a couple of months years ago), experts estimate that true BTO in the USA still represents no more than 5% of sales.

So we asked our interviewees what they thought. In particular, we wanted to know why, in the internet era, when product personalization has been enabled by advanced information technology (e.g. Warby Parker for glasses), that there hasn't been more of a move in the direction of BTO. And the American demand for more product customization is surely strong: we've got over 20 varieties of Cheez-Its® to choose from now, just for an example. The answer to this question is crucial for the dealers of tomorrow, because a store designed to work with just 5 or 10 demonstrator vehicles, rather than with a 200-car lot, will be a radically different operation, if only in terms of real estate investment alone.

Collectively, the answer that our interviewees gave was that a) widespread adoption of BTO would not occur by 2025, though b) it would certainly gain some ground, and c) remain a favored option in certain selected cases.[113]

There were factors that they believed argued in *favor* of BTO, such as:

- As cars add more and more features, it becomes harder and harder to differentiate vehicles (e.g. does a 10th airbag matter much, when every other car has 9?), so if all buyers have to do is choose among paint colors and seat fabrics (because every car has every feature), it should become easier to run fast BTO/BFP systems.
- As cars become more expensive (e.g. with added safety, fuel economy, and autonomous features), and as interest rates rebound eventually, the cost of carrying massive inventories just becomes prohibitive across the board.

But the factors that work *against* BTO they felt were stronger:

- "While in theory we could create OEM- or dealer-managed central inventory pools, to allow fast BFP that looks to the customer like true BTO, I don't see competing dealers eager to collaborate in using them. Dealers will always worry that the other guy has better access to the pool, or that their competitive edge in the market in the first place was a bigger inventory. And OEMs won't want to fund such pools themselves. So dealer swaps will still dominate, or, in the case of the chains, swaps within their own network. Swaps will reduce inventory, but not by much."

[112] For example, a survey of dealers and auto executives published in Automotive News back in 1993 opined that by 2013, "instead of carrying large inventories ready for instant sale, dealers will custom-order what customers want, to be built and delivered directly to the buyer within a week."
[113] E.g. in the case of premium sports cars buyers seem very willing to wait until the factory can build their very-highly-specified Corvette or Porsche. Tesla is another example of a car whose customers are willing to wait, but as one dealer put it, "They are an exception, not a role model."

- Today many if not most customers still alter their car choice at the dealer, by switching colors, trim levels, or more. "The need to see in person the actual item one is about to spend $35,000 on is strong." An analogy may be furniture, where online sales have not made big inroads into showroom revenues, as customers seek to touch and feel the product before buying.
- OEM product planning would have to get a *lot* better: "The factories can never really support widespread BTO because with it they would lose the option to jam unwanted models onto dealers. Build-to-order implies there *are* orders, and in the case of the inevitable product flops, some cars must be *sold* – by dealers – not just wait around to be *ordered* – by customers."[114]
- "In the struggle between getting *exactly* what I want *later* (BTO) and getting *most* of what I want *now* (BTS or BFP), for Americans the latter will always win. And Amazon Prime and other online retailers have been reinforcing this tendency, with their marketing of ever-faster deliveries. Instant gratification rules."[115]
- We may not need to move to true BTO if BFP continues to improve in terms of transparency and accuracy, so that there is not much to be gained by going all the way to BTO. If a customer can see online the progress of his desired unit in transit from a dealer 5 states away, to his local store, he may be quite happy – whereas in past years he more likely would be annoyed, having to sit by the phone waiting for the dealer to call him (and likely tell him the car had been lost!).
- BTO has gotten faster, but not yet fast enough for mass-market acceptance. As one interviewee put it: "I don't know how fast delivery has to be to convince most buyers to try it, but I know for sure we are nowhere near that quick yet."

Taking all these views into account, our forecast for BTO penetration for 2025 is for a modest increase, such that, taking it and increased BFP activity into account, average dealer inventories by then should be down from 60 to 50 days' of sales on average. The follow-on implication is for a modest reduction in real estate requirements, but for no mass conversion of stores to "demonstrator only" showrooms.

How will the *physical* store change? *Inside* the store: will the facilities arm's race end?

Before we tackle this question, let's recap our findings from the 2012/2013 NADA Factory Facilities Programs research project. Our findings then (and please consult the full reports for much more detail) can be summarized as:

- *expansion* of a dealer's facility can often pay off, in terms of ROI[116] (e.g. adding service bays),
- but *modernization* (e.g. installing new exteriors, fixtures, furniture) is harder to justify economically (except in cases of refurbishment of run-down stores),
- and *standardization* (replication of features across stores, above and beyond logos and signage: e.g. standardized floor tile) seems to be of no benefit at all, to dealers or to customers.

As a result of these findings we asked that OEMs: redouble their efforts to provide dealers with better *business cases* for facility investments, and ease off on standardization demands that seem very hard to justify.

[114] Also, the first OEM that makes a strong move towards BTO will certainly find its rivals advertising to customers: "Why wait around for an Acme? We at Standard Motors have your car now!"
[115] And in this case millennials may not be any different. As one interviewee put it clearly: "Wait around for an ordered car? Heck, these people can barely wait 10 minutes, let alone 10 days: look at how they binge-watch a whole season of a TV show in one long day!"
[116] Return on Investment

In general (for dealers as well as OEMs!) we felt it was time to slow the facility "arm's race" that has marked the last decade or two, as ever more elaborate and expensive "Garage Mahals" are constructed.

Those were our views a few years back – and to cut to the chase, they did not change as we researched the current project. If anything, we think it makes even more sense today to think about more flexible and lower-cost dealership facilities in the run-up to 2025. Several insights brought us to this conclusion.

First, if as we predict dealer profit margins will be lower in 2025 than today, then affordability of elaborate facilities will be worse, and ROIs of investing in them even lower. Along with spending less on the main showroom should come store "unbundling" to further lower cost: consolidation of administrative functions on cheaper offsite real estate, central reconditioning shops serving multiple stores, central body shops, etc. Most OEMs are to some extent supportive of these kinds of moves, though the support is varied and erratic. And of course, given how much concrete we have poured over the decades, it will take many years to start scaling down the main facility, and scaling up the lower-cost offsite locations.

Second, if as we predict more investment in service will be necessary (both at the main store and at satellite service facilities), then funds should be diverted there, and away from the main showroom. As one dealer put it to us: "If investment in the past was 50/50 sales and service, it must shift now to 30/70, because service demands in both volume and complexity will be growing, while customers' reliance on the showroom to help them shop will be declining. But I don't know if OEM egos will allow for cutting back!"[117]

Third, to build on that point, if the current trend towards more and more *online* shopping and even final selling continues – and we cannot see why it would not – then it makes less sense to invest at high rates into the *offline* (physical) showroom. Of course the showroom must be pleasant, modern, and supportive of the car brand's image – but if customers are mostly coming there to run a test drive, or confirm their purchase, or take delivery of the car they have already bought, then the showroom need not be as elaborate as it has become. **If the showroom is carrying less of the selling burden, then the showroom should consume less of the store's capital**. Some of the strongest retail brands in existence prove this point: Apple stores are simple boxes (once one is past the admittedly impressive façade); Starbuck's stores vary immensely in their furnishings; no one could tell an ATT store from a Verizon shop if the signage were removed; a Costco store is basically a barn; and there is nothing at all special about the clothing racks at H&M. Yet in automotive we insist on specifying the color of the counter top that no customer ever notices, and on tearing *down* from the walls the inexpensive posters of local scenes—that Starbuck's and others are racing to put *up*.

Fourth, the rise of internet shopping, the near-elimination of new-car margin, and with both the collapse of price variation, actually provide an opportunity for greater freedom in local store variation. If the car sells for (almost) the same everywhere, then the dealer needs to differentiate on something other than price, and why can't it be store design? If the customers are frugal farmers, allow a simple and basic look that assures them their money is not going into buying ritzy espresso machines. If the customers are tech-savvy millennials, drop the mezzanine balcony in favor of power outlets and VR (virtual reality) displays. If customers are outdoors enthusiasts, divert funds to attractive landscaping.

[117] Ironically, every OEM executive we spoke to told us that the facility arms race must end, but that it was OEMs other than themselves who were the guilty parties. It is a very rare factory executive who will admit to having overdone it, in terms of facility requirements.

In summary, although corporate ego may yet get in the way (again), we will (again) forecast that the main physical store of 2025 should be relatively lower in cost, due to less elaborate and smaller selling areas, deflection of spending from the front of the house (sales) to the back (service), and relocation of various functions to cheaper offsite positions (e.g. service and administration). I do realize, sadly, this forecast may contain a large helping of wishful thinking.

How will the *virtual* (digital) store change?

We've talked about what the *physical* store might be like (how many stores, how much inventory, whether service will increasingly be off site, etc.), but as we all know there is also a very important and expanding *virtual* store: the "digital dealership." This is where, increasingly, customers first encounter the dealership today. Accordingly, we spent quite a bit of time interviewing on and researching the role of IT in the dealership of 2025.

Generally, dealers were very conflicted about software. On the one hand they were excited about the possibilities it offered for their business, but on the other they resented their dependency on it. There was always interest in the "next new thing" that IT could do, but also regret that, because they had spent years chasing these next new things, that now their stores were overrun with dozens of programs and vendors that did not always work well together. There was also resentment both about the market power of the "Big Two" DMS vendors, and about the way the "plug in" vendors[118] seemed to charge dealers for use of data that they themselves had originally generated.[119] Perhaps all this was best summed up by a regretful comment by one interviewee:

> "IT got away from us, and now we are paying the price. Whether it was the dealers or the OEMs who were too slow or too inept to invest in IT (not just *buy* it), as it began to take over our stores we let third parties take the lead, and now we are at their mercy. They've extracted a lot of value from dealers and OEMs over the years, and I don't see how we claw it back. The biggest national dealer chains might have a chance, as they have the funds to invest in in-house IT, but the rest of us are dependent on the vendors, and maybe it is our own fault."

In any case, this report is about the future, so let's refocus on that now, and away from the past. We were able to identify four different perspectives on dealership IT, as it evolved towards 2025: IT as a tool for dealers, as a control mechanism for OEMs, as a security risk, and as a battleground.

A. IT as a tool for dealers

Of course what first comes to mind when one thinks of dealership IT, is how it can be used as a business tool by dealers. And our interviewees tell us that the full potential of IT as a business tool is *far* from exhausted. IT can be used to generate sales *today* (e.g. lead management), keep customers in touch and happy so as to generate sales *tomorrow* (e.g. CRM, for both car and service sales), run the store overall, and then analyze every aspect of the business so as to optimize it.

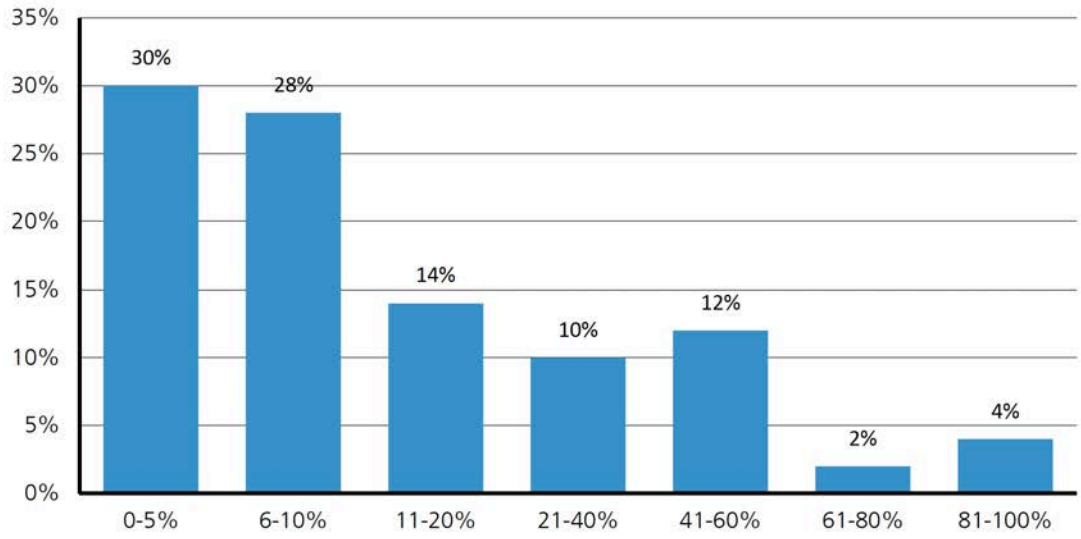
On the customer-facing front we are all familiar with how marketing, advertising, shopping, and even selling cars has moved online. In this arena, the most powerful trend going forward, our interviewees told us,

[118] IT vendors whose products or systems "plugged into," or ran on top of, the basic DMS IT backbone of the store.
[119] Though to be fair to these vendors, they themselves have to in turn pay significant sums to the DMS vendors, for access to dealer systems. There seems to be a lot of pay-to-play money sloshing around the dealer IT world.

was completing the transformation of customer contact *from one-way* (show the customer a billboard, a TV ad, etc.) *to two-way* (engage the customer via email, social media, reviews websites, online service scheduling, etc.). The possibilities are endless, from simple email confirmation of an appointment, to active management of dealership reputation, to detecting a service need – and alerting the customer to bring the car in – via vehicle telematics.[120] Two-way interaction offers much more opportunity to keep as well as capture the customer.

And probably the ultimate end point of this evolution is a completely-online sale of the car. We know this is already happening (even if *technically* the transaction is not 100% digital if physical paperwork must still be stamped and signed), so our question really becomes how much further it will go, and how fast? Our interviewees were pretty certain online sales would grow significantly, but to put a number on this opinion we again turned to the UBS dealer survey, which gave us these answers to the question, "What percentage of new-car sales in 2025 would be entirely online (except for the test drive)?"

Share of New Car Sales Wholly Online in 2025



Source: UBS Dealer Survey

The answers here average to about 15% or so, with a few very bold dealers opting for *all* sales being fully online by 2025. We won't go that far, since surveys today show that a very large majority of car shoppers (*including millennials*) prefers to spend at least some part of the process in person, and we don't see that changing rapidly. For one thing, with every passing year dealers improve the in-store experience, such that there is less gain in going online: if the process is pleasant, efficient, fast, and without pressure, why *not* stop by the store to take a good look at the cars? Customers go online both for positive reasons (e.g. to easily comparison shop) but also for negative reasons (e.g. to avoid aggressive sales people), and as dealers improve *they are steadily removing that second motivation*.

[120] We perceived some excessive confidence that vehicle telematics, as part of the whole "connected car" movement, would automatically steer customers to dealer service departments. They will not: dealers will have to work hard, along with OEMs, to ensure this happens. The demise of the independent aftermarket has been predicted for decades, and for decades has stubbornly refused to fold. It is quite likely that independents will argue for access to vehicle telematics, for safety reasons if for no others. If a brake fault is detected, they will argue, shouldn't the driver have the choice to go to the nearest garage for repair, not just the nearest dealer?

On the store operations front we are all familiar with how IT has transformed operations, as the DMS firms' offerings evolved up from printed paper forms, to microfiche parts catalogs, to accounting links to the OEMs, and on to the vastly complex cloud-based management systems they offer now. In this field, the most powerful need our interviewees identified, and hoped to see resolved well before 2025, was *integration*. As one leading dealer put it, "We need one customer file across all functions and modules, not more functions and modules: only when all the systems we have are fully integrated and seamless can we become as productive as all the vendors promise!"[121] We can only agree: maybe this IT transformation will enable us to finally blow through the aforementioned ten-cars-per-month-per-salesperson barrier.

Putting these external and internal aspects of IT tools together, dealers by 2025 may be able to reach the promised land of IT-enabled retailing: to offer customers the human touch of the local store of the 1960s, combined with the automated efficiency of the modern big-box retailer of today. Put this way, IT will not replace humans in customer interaction and store management, but make humans so much more efficient that they can spend all their time on customers and employees – not on re-entering customer addresses, clearing spam inboxes, and correcting VIN numbers. IT will *reinforce* the role of humans over the next decade, not *eliminate* it.

B. IT as a control mechanism for OEMs

Many of our interviewees felt that OEMs believe that all data related to the transaction (car data, customer data, dealer data) belong to them … of that they at least should have access to it all. In some respects this is the fault of dealers: back when there was less data around (e.g. maybe just customer name and address, for mailing recall notices), dealers tended to not bother to figure out who owned it, or who had access to it. Few read the fine print in any EULA (end user license agreement), most merrily clicked away on the "Accept Terms" buttons, and now it may be too late to put the data genie back in the bottle: "the factory knows everything now," we were told.

And the trend continues. Does a dealer want a favorable factory warranty on a CPO car? Just grant the OEM access to the car's entire service history. Want a special OEM used-car over-allowance bonus? Just click to allow complete access to the used-car operation's P&L. Each successive click yields more control to the OEM, because when only the dealer knew the details about local markets and customers, the dealer was more valuable to the OEM. If the OEM already knows all this now, it has less need for the dealer. We've even seen so-called data-aggregation firms emerge, that help OEMs analyze and leverage all the data they are now collecting. As one factory executive put it to us, quite candidly: "Advanced IT lets us talk directly to the customer, *finally* letting us past the dealership firewall."

It was unclear to our interviewees that at this late date much could be done about this situation, other than to make dealers **aware of how each time they "click" on a new factory program (that requires another slice of their data), they may be reducing their long-term independence**, even as it may boost their short-term income.

[121] With integration may also come another desired outcome: focus. Everyone we spoke with complained that the average store might have 20 to 40 IT vendors, each brought on at some point in time for some good reason, but adding up to a present-day Tower of Babel. "It's time for dealers to stop chasing the next shiny IT app, cut back to just a handful of vendors, and make sure everything works together," as one dealer put it. As I myself observed at the last NADA convention, the only thing that outnumbered the dealers on the floor might have been the number of CRM vendors.

C. IT as a security risk

This is a familiar topic to every American. The more massive the data flows in and around the car and the customer, the more vulnerable to hack-attack is the entire automotive industry. And the industry is not yet on top of the problem: as one interviewee told us, "The car in 2015 is about as secure as the internet was in 1995, and we all know how well *that* worked!" We've seen the news stories about remote control of car systems, customer ID theft, and more, so there is no need to repeat these here. But we will highlight two specific security issues that may plague dealers between now and 2025 – by which time we hope these leaks will all be plugged!

- First, we will need to harden the service lane against cyber-attack, as NADA has been urging its members to do. One malware-laden USB stick plugged into a service advisor's computer and every car in that day for work may see its systems penetrated. Closing these paths of attack will cost money, but the liability is enormous, and so dealers and factories will have no choice to spend the funds. If you think this is an over-reaction, recall that hackers have gotten into cars via such seemingly-innocent routes as the TPMS (tire pressure monitoring system)!
- Second, dealers and OEMs together need to make sure that OTA (over the air) vehicle software updates are handled securely. The public is enchanted by the possibilities of OTA, perhaps somehow thinking that it means they won't have to bring the car in for work anymore (whereas some 90% of service still requires physical work). But the risks are high. On the security front, we will note that the aviation industry considers OTA updates too "buggy" and insecure to permit. On the liability front, OEMs in particular will have to grapple with warranty-related OTA update issues. Consider a safety-related OTA update: is the OEM liable if it does not release the update immediately? Must it push out an update with every incremental change it makes? Do we enter a world of "permanent recalls," as one dealer put it, when OTA makes a recall action almost instantly possible? This may be good for dealers, if OTA updates encounter conditions requiring a dealer's intervention, but it may also lead to customer indifference and dissatisfaction, if the dashboard repeatedly is lighting up every day with required fixes.

In short, when it comes to IT as a security issue, by 2025 we need to find a way to "harden" the service lane, and lock down and manage OTA updates. (And these issues will become more acute as AVs multiply.)

D. IT as battleground

We've already talked about how IT gives the *OEMs* more power over dealers. And dealers are already aware of how IT has given *customers* more power, too. As two dealers told us:

- "My biggest competitor? It's the smartphone."
- "The customer's IT is way ahead of my IT."
- There is not much a dealer can do about this: the customer will bring whatever tools he or she wants to the party. However, dealers can continue to invest in analytics that keep the playing field close to level.

But IT is a battleground for another struggle, and that is between *third parties* and dealers. Yes, the "disintermediators" are back again (shades of CarsDirect, years ago…). Sometimes they are online updates of the old-school brokers who have always been with us, sometimes they are some sort of hybrid lead generator/advertiser/broker, and sometimes they are active only in the less-constrained world of used cars (e.g. Beepi), or the separate arena of F&I. (As noted, more than a few online finance companies are trying

hard to poach the F&I income a car buyer generates, by splitting the finance transaction away from the vehicle deal.) The point is, IT makes it easier for these firms to break in to automotive retailing (an app is easier to build than a physical store), even if their business models are not strong enough to let them *stay* in.[122] Dealers will probably, in response to these entrants, do as they always have done: study the attack, learn from it, and absorb its best features. So a dealer feeling threatened by online brokers offering transparency can redo the store's website to offer the same, either via in-house resources, or by bolting on a front end to the store, such as offered by firms like Roadster.

To summarize our views on the online side of the store in 2025, dealers will benefit from advances in IT that allow them to re-establish the personal connections with customers they once had (via fast inquiry response, social media, rating systems, etc.) but on a lower – more productive—cost base. However, offsetting this positive are persistent worries about increasing OEM control, cybersecurity risks, and IT-based power struggles with both vendors and customers.

Where the physical and the digital store meet: will we see "the death of geography?"

Historically dealership sales territories were all based in the physical world: this much population lived within this many miles' radius of the store, with adjustments for major roads and traffic flows. Dealers knew how many potential customers were in reach, and by what means of advertising to reach them. In turn, OEMs could measure dealer performance by tracking sales against registrations in that same area (although there was always a lot of argument about the specifics of the performance calculations).

This is all changing rapidly. Our interviewees told us about city dealers reaching out to poach customers from smaller rural dealers miles away – and vice versa. And as more dealers move to digital advertising (which is unbounded geographically), positive (or negative) impressions about a particular store can spread across the country as fast as word of mouth about a dealership used to travel from neighbor to neighbor on the same street. In effect, everyone in the USA can now buy from any dealer in the USA.

Of course, that extreme scenario is unlikely to happen. There are costs to shipping cars. There are test drives to be done (but not always). There is comfort in buying from the local store, with the local service facility, and with the local person a customer can develop a relationship with. And if prices don't vary as much as they used to, why go hundreds of miles to save only a few bucks?

But the tendency is clear: geographic market territory boundaries, if they used to serve as great stone walls around the dealer's castle, have now been reduced to flimsy picket fences. What are the implications of this development? There are several, and they are not all clearly good or bad. First, of course, is that this plays into the hands of the stronger dealer: the poorly-run dealership 50 miles from the stronger store is no longer as insulated as it once was. Second, it even further pressures prices: a customer can get viable quotes from numerous stores no matter where they are. Third, it throws a real wrench in OEM sales effectiveness metrics: how can a factory tell what a given store's potential really is, if there are no more hard boundaries to its sales territory? What systems will factories develop to replace the current ones, developed over the last 40 years or so?

[122] For example, as mentioned earlier, an online used-car broker may boast about being "asset light," by virtue of owning no inventory, but then finds itself racking up massive logistics costs, as it moves bought and sold cars one by one among buyers and sellers. Or an online new-car pricing service that promises customers a slice of a dealer's margin may collapse, when it realizes the dealer doesn't have any new-car margin any more.

And finally, taking all these factors into account, the "death of geography" probably erodes the average store's value (as in blue sky multiple). This is because a store's value is the sum of many parts, including land quantity and quality, highway frontage, brand reputation, size and quality of buildings, management team, and… *the value of the sales territory itself*. As an analogy, a hunting lodge could be valued in part for how many elk can be found on its land. Well, if the elk can easily wander off to the next lodge's turf, how valuable was its territory after all? **To the extent part of the store's valuation is the worth of its territory, then the erosion of territorial boundaries erodes the value of the store.**

* * *

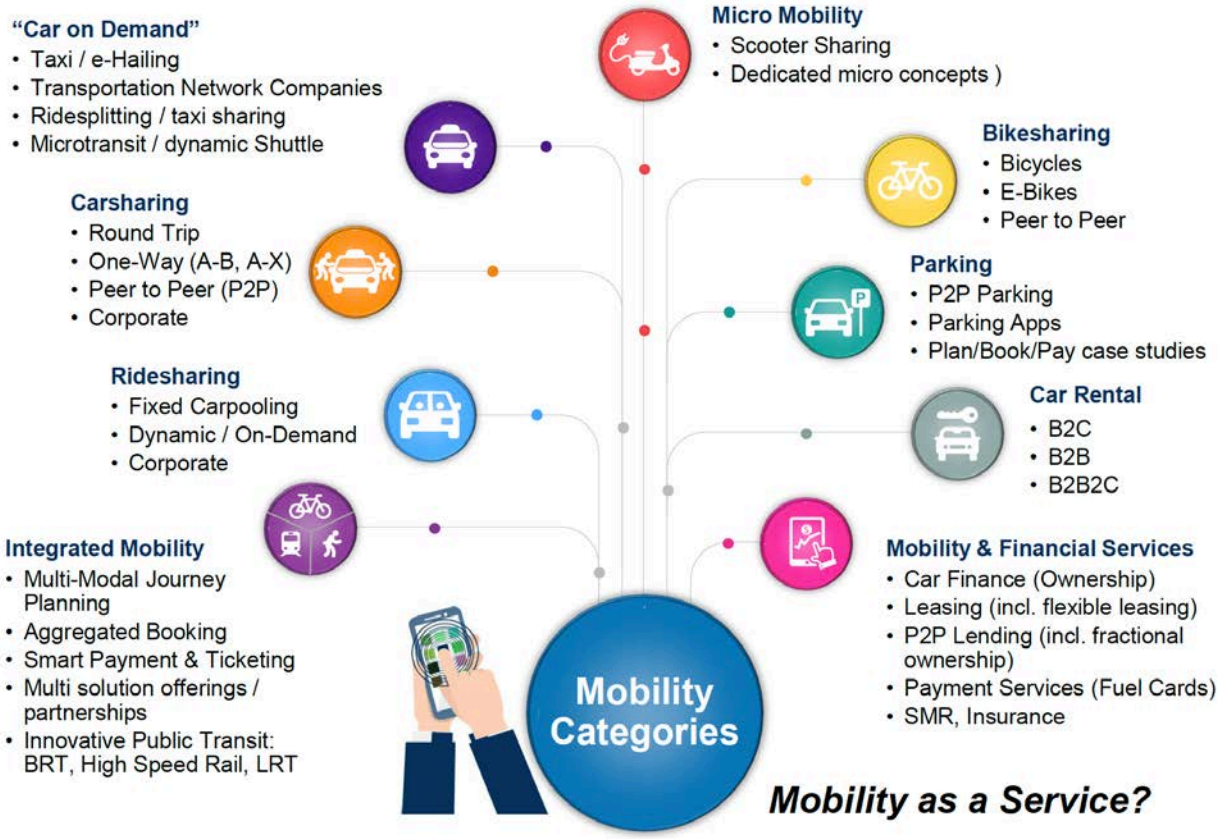
To close this chapter, our view of 2025 from a store point of view is that the investment in inventory will remain high, if slightly reduced (due to small gains in BTO and BFP), while we hope that the investment in lavish facilities can be rebalanced toward investment in satellite service and the digital storefront. On that online front, IT tools (especially if they can work on a highly-integrated basis) will increase their usefulness to dealers, but also present the risks of growing loss of control to OEMs, a serious loss of data to cyberattack, and a potential loss of customers to digital interlopers. And the unlimited reach of the digital store implies the "death of geography," as traditional physical sales territories are eroded, again allowing stronger dealers to extend their lead over weaker ones.

In sum, IT remains the sharpest of double-edged swords.

SPECIAL TOPIC
Chapter G: Mobility Services (MS)

Our next special topic is that of Mobility Services (MS). We are using this term to cover a vast array of concepts, from carsharing (e.g. car2go), bikesharing, (Citi Bike in NYC), transportation network companies aka "rideshare" (Uber), microtransit (Bridj), and even taxi apps aka "e-hail" (Flywheel). And that is just a partial list: one could add other services such as pre-arranged carpooling.[123] And we could change the labels: is it really ride "sharing" if you're paying for it? Maybe we should instead call Lyft a ridehail firm. This chart from Frost & Sullivan says it all:

Mobility Services Typology



Source: Frost & Sullivan[124]

For the sake of simplicity we'll focus in this section on the two major flavors of MS: rideshare and carshare. And we'll warn readers in advance that there is no field of debate today more rife with assertions, exaggerations, and even pomposity than MS, perhaps because there is so much money being thrown at the field, on the basis of so little data or experience.

[123] And yes, there are even apps that make it easier to hitchhike. Maybe the 1960s are coming back…
[124] Frost & Sullivan, "Future of Mobility," Martyn Briggs, UBS Investor Summit, September, 2016.

Let's tackle **carshare** first, as this is a more familiar area, and one where predictions of impact seem more stable. In carshare someone else (a person, a company) owns a vehicle, and you pay to use it (and drive it yourself), typically for a short time (e.g. hours or days), usually by using a smartphone app. Brands active here are Zipcar and RelayRides (now called Turo) and car2go. If this sounds to you a lot like car rental, you are correct: it is. We've had longer-term car rental with us for a long time (Hertz dates back to 1918), so carshare is essentially a new twist on an old concept. Innovations include the ability to rent from other individuals (not just firms), the use of smartphones for rental and return, and in some cases the staging of cars not at rental lots but on public streets, in convenient locations scattered across town. Carshare in the USA has been growing rapidly—but from a very small base, such that by 2025 probably no more than 100,000 cars will be available this way in the USA (whereas by comparison Hertz alone already has half a million vehicles on the road here). Further, we might expect that this particular form of rental becomes absorbed into the traditional form, and this has already started to happen, as Avis has purchased ZipCar. Does carshare reduce new-car sales, and therefore impact dealers? Absolutely. But we don't view the reduction as significant: CAR sees the hit so far at about 15,000 units per year (although growing).[125] And as dealers already coexist with the traditional rental firms, it is likely—in our view—that they can coexist with carshare as well.

Rideshare is a different animal entirely, which on the one hand represents *no* threat at all to the dealership system, but which on the other might be the biggest challenge dealers will *ever* face, by 2025. Scoping the size of that challenge is very difficult, in part because rideshare is growing so rapidly, but in part also because some of the leading firms in rideshare are losing money at such a fast pace that they are likely to evolve in new directions, probably almost as unknown to them as to us. We'll start with the no-threat-today part first, and then spend most of our time on the larger future threat.

But first, as usual, a definition: in rideshare the customer requests a ride from the rideshare service via a smartphone app, which then offers the request to drivers in the service's network, one of whom will take the request and arrive at your location. Typically the driver owns the rideshare vehicle.[126]

Today rideshare is mostly chewing into the revenues of the traditional taxi business. Rideshare firms offer customers greater convenience in finding a ride (smartphone hailing versus street flagging or calling the dispatch center), advance estimates of fares, avoidance of the fraught process of calculating a tip, greater convenience in payment (via the phone), lower trip fares, and other benefits. Thus they have taken significant share from taxi fleets in major American cities, forcing some fleets to go bankrupt and the market price of a taxi license to fall: a license medallion in New York City that went for $1.5 million in 2012 is worth $0.5 million or less now.[127]

Dealers for now can look on all this with some indifference, since taxis number no more than 175,000-200,000 units in total across America, a barely measurable sliver of the fleet – though because they

[125] BCG, in its 2016 report "What's Ahead for Car Sharing?" sees a similar small dent to SAAR, in the range of 10,000 units annually by 2021 (netting retail car sales lost and carshare fleet car sales gained.) We are aware that Zipcar asserts it has taken 400,000 cars off the road (across 8 countries, and over a decade of use: see http://bit.ly/2cEhFxQ), but this number is based on customer surveys, and when a person says "I would have had to buy a car if not for Zipcar," we are not sure how reliable that assertion is.

[126] But this is not always the case. Certainly Uber does not own its cars, but there is no reason a limo service cannot allow its drivers to sign up for Uber, and in this case the limo company may own the car.

[127] Not that it matters directly to dealers, but we would not count out taxi fleets yet. Stunned by the rapid rise of rideshare, they have been badly hurt but are now fighting back. On the regulatory front they are arguing for a level playing field for the rideshare firms (e.g. if a taxi fleet must be equipped to handle disabled passengers, so should Juno) and on the commercial front they are upping their competitive game (thus the company Flywheel offers an app that enables taxi fleets to emulate all the best features of their rideshare rivals). My guess is that at some future point taxi fleets and rideshare fleets in major cities essentially converge.

are driven so many miles per year (typically 60-75,000), they do make up a bit larger slice of annual VMT.[128] And it is true that for some car owners – especially in urban centers where car ownership costs are exorbitant[129]—rideshare may displace car ownership (just as taxis and mass transit have *always* displaced car ownership in cities: this is not new). At present this displacement effect is small and hard to measure: numerous and often directly-conflicting studies have had trouble coming up with a definitive answer to the question as to whether and how much rideshare is hurting new-car sales.[130] For one thing, rideshare may be taking volume away from public transit as much as from private car ownership. And the most popular uses of rideshare seem to imply that it is *complementing* car ownership rather than *displacing* it: ridesharing usage peaks on weekends, and between 10 PM and 4 AM, indicating it is used mostly for social trips (e.g. avoiding driving home from the bar, under the influence). Indeed, surveys indicate much lower use of rideshare for commuting, and for errands, than for social purposes.[131] See for example the pattern of Uber rides given in Pittsburgh:

Uber Ride Request in Pittsburgh Throughout the Week

Source: newsroom.uber.com

[128] Author's estimate, via data from Taxi Research Partners and the Taxicab, Limousine and Paratransit Association.
[129] More than a few choice parking spaces have sold in cities such as Boston and New York for six digits.
[130] Recent surveys by KBB (e.g. "Car Sharing Trends: Highlights Deck" from March, 2016) show that users of rideshare services are more likely to purchase a new vehicle in the next two years, than non-users.
[131] But even today there are rumblings of rideshare firms broadening their appeal beyond late-night social trips. Perhaps surprisingly, business people have taken eagerly to rideshare apps while traveling, reducing somewhat their use of rental cars and dramatically cutting back on their use of taxis. For time-constrained business travelers the ease and speed of "calling an Uber" is very attractive. See this exhibit on the rapid inroads of rideshare into business travel (expressed as a share of ground-transport transactions, from business travel expense-tracking firm Certify's 2016 report Ride-Hailing Continues to Rise at http://bit.ly/2cEhX7V):

	2014				2015				2016
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Taxi	37%	36%	31%	30%	25%	24%	22%	20%	14%
Car Rental	55%	51%	52%	48%	50%	45%	44%	38%	40%
Ride-Hailing	8%	13%	17%	22%	25%	31%	34%	42%	46%

And dealers dismissive of rideshare's impact can point to the massive losses that some rideshare firms are racking up. Uber seems to be losing over $1 billion a year,[132] which is a big number even in Silicon Valley terms, and could be seen as evidence that the company is only gaining share against taxis by pricing rides below cost, which is not a formula for long-term success. And the barriers to entry to rivals are low: only a few weeks after Uber and Lyft pulled out of the Austin (Texas) market (as the result of a regulatory dispute), several rival services (both established and start-up) rushed in to fill the gap.[133]

Adding all this up, and we believe (along with other analysts), that rideshare might not dent 2025 sales by more than 10% at the very most, which is significant but manageable.

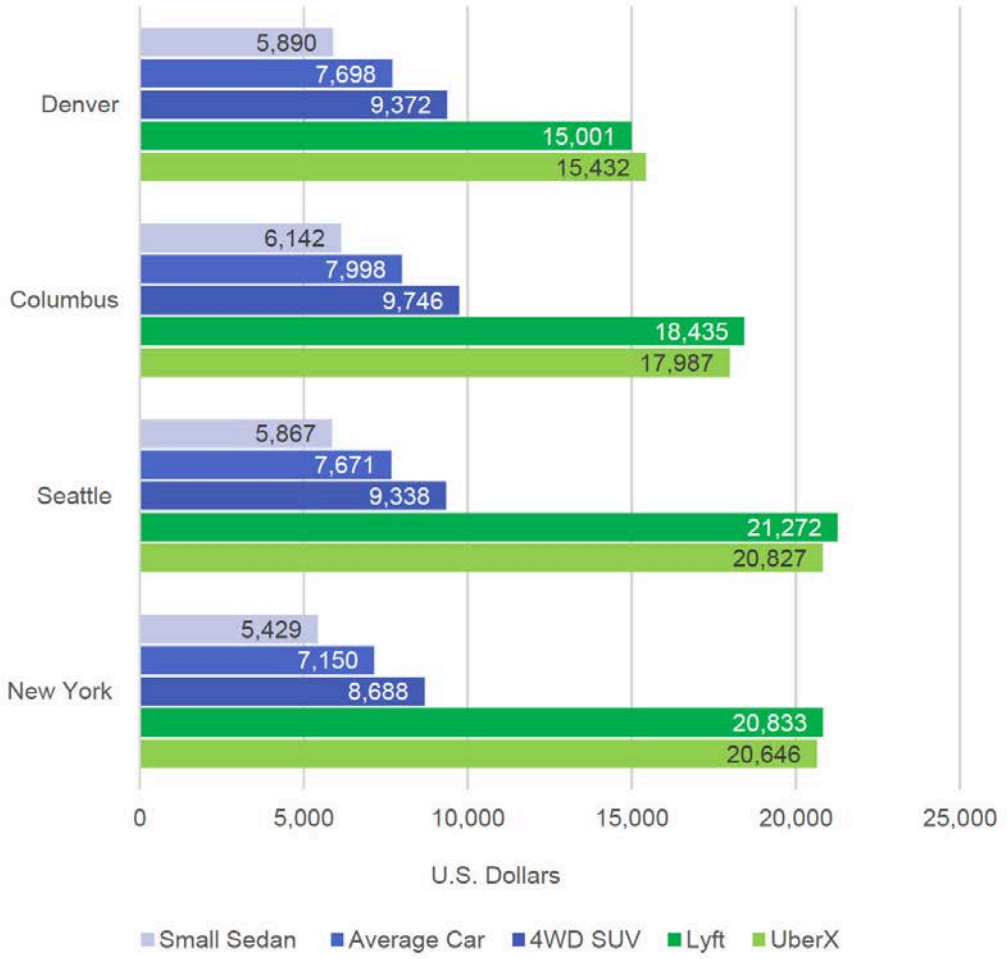
But that estimate assumes rideshare continues as it is currently configured. It is becoming increasingly clear that rideshare firms must reach beyond taxi-displacement to succeed in the long run, and this is where dealers should start to become concerned.[134]

How rideshare firms could really turn the corner is by showing current part-time users how rideshare can be economic enough to eliminate personal car ownership entirely, thereby converting them to "full time" rideshare users. If they can make this case, then Americans could start to give up car ownership entirely. If this were to happen, new-car sales would plummet, since one rideshare car can easily displace several owned cars, given that owned cars are parked about 95% of the time.[135]

The barrier to this switch is that, under current economics, rideshare is costly enough on a per-mile basis that only car owners who don't drive very much could afford to give up the car. To make the point clearly: if every year you drive across America and back to see your relatives, there is no way an Uber will be an economical replacement for your own car, assuming it is a reasonably-priced sedan. Various analysts[136] run their own numbers as to the tipping point between owning and ridesharing, but we can probably say with some confidence that at 7,500 miles a year or more, a swap of one's own car for "pure" rideshare (100% of trips) doesn't make economic sense. (I cannot stress how sensitive that number is to assumptions about geography, gasoline prices, depreciation rates, and much, much more.) That number is based on urban usage – it would probably be even lower in rural areas. So, with the average American car being driven 10,000 miles or more annually, rideshare cannot so easily make the "ditch your car" argument (see the exhibit, from CAR's take on this).

[132] See "Uber Loses at Least $1.2 Billion in First Half of 2016," by E. Newcomer, Bloomberg online, August 25 2016
[133] In fact, there is even a tutorial for starting your own rideshare business, if you're game: http://bit.ly/2cepNCE
[134] Uber is already edging out of the taxi-replacement space and into the world of mass transit with UberPool, Uber Scheduled Rides, and Uber Suggested Pickup Points. I do remain skeptical, however, that replacing a 50-person bus with a couple of dozen individual cars will do anything other than further clog already-congested city streets. See www.humantransit.org. The firm is also pushing hard into local food-delivery services.
[135] From that 95% figure arithmetic says that one rideshare car used 100% of the time would replace 20 owned cars. However, the real "displacement" number must be much, much lower, because of car usage patterns. That is, if during rush hour 40% of cars are on the road, then at that time one rideshare car could only displace 2.5 owned cars. Various academics have taken various approaches to calculate the true ratio, but the complexity of assumptions involved in their models are such that we cannot rely on any one as more reliable than the others.
[136] See especially the recent CAR report, The Impact of New Mobility Services on the Automotive Industry, August 2016, at www.cargroup.org

Annual Costs: Ridehailing vs. Ownership (by City)



Note: while CAR shows that using solely rideshare is 1.5-3.8x costlier than owning a private vehicle in these 4 cities, if rideshare is heavily supplemented with mass transit use, the equations move *against* private vehicle ownership.

But if the rideshare car can eliminate the driver, the equation shifts. The driver is the biggest cost component of rideshare, assuming some reasonable number of miles driven (to amortize the price of the car itself). This could happen if we bring together rideshare with autonomous vehicles (AVs), as we'll discuss now.

Generally, one could view AVs as just regular cars, with added features: an owner of an advanced AV could have herself driven by the car's artificial intelligence, leaving the car's occupants free to do other things, such as answering emails or taking naps. But a second view of AVs imagines their usage as shared: a fleet operator would own the cars, and passengers would purchase rides only, not the vehicle itself. It is hard to forecast this happening, as there is no clearly relevant precedent for humans giving up ownership of an asset in exchange for just renting it.[137] However, that does not mean this could not happen.

[137] There are some analogues of course: most American men today rent formalwear, whereas in an earlier age they might have owned the tuxedo. But none of these precedents seem directly analogous to cars.

And if it did, and thus if rideshare firms can replace human-driven cars with autonomous vehicles, and if the price premium of an autonomous car can be reduced (to its expected future level of a few thousand dollars per car), and if the road infrastructure can be upgraded to support these cars[138], and if the service can be run conveniently and safely as well as cheaply, and if the legal and regulatory framework can be adapted to fit – these are quite a few "if's"—then for millions of metro-area dwellers rideshare could become economically attractive, relative to car ownership. In this scenario, a rideshare company could break out of the limited arena of taxi replacement, to the vast expanse of *total fleet replacement*. Thus we see Uber racing ahead, in investments in people and technologies, and in on-road testing, with autonomous cars, to try to get to this new level of penetration before its funds run out.[139] And there is a tailwind here, in that the place where the demand is greatest for rideshare, is also where it may be easiest to launch autonomous vehicles: urban areas. Urban dwellers face high vehicle ownership costs (see parking, as mentioned), and urban streets are low-speed settings where an autonomous vehicle is much less likely to hurt anyone if there is a problem.[140] (The average speed of traffic in lower Manhattan, for example, is about 10 mph.[141]) Thus some experts who see *high-speed go-anywhere personally-owned* autonomous vehicles as 15 years off, see *low-speed urban-only fleet-owned* autonomous vehicles as only 5 years away. And indeed Uber recently began testing such vehicles in Pittsburgh.[142]

From a dealer point of view, the convergence of rideshare and fully-autonomous cars becomes problematic. To control and carefully maintain these cars, they are probably going to be owned by the rideshare firm, meaning these would be low-margin fleet sales. And to the extent that OEMs decide this is their future, and expand upon partnerships they have already made with rideshare firms (e.g. GM and Lyft, Toyota and Uber), there is some chance dealers would be cut out entirely: if it is GM that is owning and running its own rideshare fleet, can't it sell cars to itself – directly? Dealers would get more service work, true (to pay off, autonomous rideshare cars must be driven many more miles than 10 or 15 thousand a year), but that would be all. Certainly F&I income would evaporate regardless as to whether the vehicles are owned by the OEM or the rideshare firm, both of which would have their own wholesale financing sources. Thus in an autonomous-rideshare future we could see a sharp drop in unit sales, a loss of margin, and a complete loss of F&I income – offset only perhaps slightly by more service work. This is not a good future for dealers

But let's calm down a bit. First, this phenomenon is probably going to be limited geographically. Summoning an Uber to a ranch outside Boise is hard to imagine under almost any conditions.[143] Second, this revolution will be bounded by use cases:

- Owners of expensive cars who enjoy the status they bring may not want to become "permanent renters:" after all, their ski condo only is used 5% of the year, but they like to own it anyway.

[138] E.g. with clear lane markings for the AVs sensors to read.
[139] Cynics would say rideshare firms have to launch such pilots, whether they make sense or not, since to sustain their lofty valuations, the companies have to be seen as constantly moving forward.
[140] But the urge to own a car is strong, even in congested cities: about 60% of households in traffic-clogged London have their own cars ("National Travel Survey 2014," UK Department for Transport), and almost half of households in New York City (http://www.nycedc.com/blog-entry/new-yorkers-and-cars%20).
[141] Actually, more like 9.3 mph. See "In Bloomberg's City of Bike Lanes, Data Show, Cabs Gain a Little Speed," Matt Flegenheimer, the New York Times, September 4, 2013.
[142] It will be interesting to see how "robotaxis" handle messy issues that human drivers can easily resolve, such as customers not being where they told the app they would be, customers making the car wait, drunk customers misbehaving (drinking in the car, jumping out, fighting, and worse), customers asking for on-the-fly changes (going back to get a lost item, making a quick stop, hitting the drive-thru), etc. See https://goo.gl/L8h9S4
[143] Conversely, in China rideshare is making more inroads more rapidly: the average person in China doesn't drive as far as the average American, and there is also less of a tradition of owning one's own car.

- Owners of high-function vehicles (used for carrying capacity or special needs beyond just getting from A to B) would probably stay away: I can't imagine a farmer watching some stranger drive off in her pickup truck.
- The same may hold for the parents of children perpetually loading and unloading car seats in and out of rideshare cars. Or the owners of large dogs who would perpetually be hit by cleaning charges from the rideshare company.
- The reader can imagine other cases. In summary, we have to admit that ownership matters.

To sum up the cases in and around ubiquitous rideshare, see these three eloquent perspectives:

> *Barclays analyst Brian Johnson: "The average vehicle is only driven 56 minutes per day–that is, 4% of the time. Even at peak hours, only about 11% of vehicles in a highway-intensive city like Seattle are in use. Accordingly, a significant opportunity exists for asset utilization to increase via sharing of self-driving vehicles."*

Versus:

> *Bob Brackett of Sanford Bernstein: "US Census data shows carpooling in the US plunging over the last three and a half decades, from 19.7% of all commuters in 1980 to 9.4% in 2013. If Americans are so prepared to share cars with other human beings, why are fewer of them doing so now than a generation ago? … Yes, cars are "inefficient"—used only 5% of the time, for example. But so is art. And so is jewelry, and I've yet to convince my wife to rent it. So are golf clubs, but we still buy them.* ***Toothbrushes are used less than 1% of the day, and a perfect app I'll develop called Gumbuddy could find neighbors willing to share for a modest fee.*** *I'd argue that automobiles in the American tradition fall closer to a personal and emotional item."*[144]

And from the libertarian perspective, as laid out by Izabella Kaminska:

> *"In the developed world the majority of households own at least one vehicle, have use of it whenever they feel like, and — most importantly — know how to operate and maintain it independently. From that point of view, the upside of our inefficient system [because the car is idle 95% of the time] is resilience, independence and the optionality to do whatever one wants… If you wish to keep smelly shoes for convenience sake in the trunk, you can. If you wish to personalise your car with furry dice and pink carseat covers, you can. You have full autonomy over your vehicle."*[145]

(In support of these arguments against the perspective that "the rational person would never own a car," I will add: if car buyers were truly purely rational consumers of Point-A-to-Point-B transport… they'd never even buy a *new* car, period. The economically rational purchase is probably a 5-year-old Corolla. The American love affair with the car may have cooled over recent decades, yet it does seem far from over. If we haven't been rational about cars for over a century, why would we become rational now?)

Rideshare proponents retort that the concept will gain traction as "millennials" (Americans born between the early 1980s and the early 2000s, formerly known as Gen Y) grow into a dominant role in

[144] Both quotes from "Investors have placed a one-way bet on Uber," S. LeVine, Quartz, 8/16, http://bit.ly/2cEiOFy
[145] From "Self-driving cars, opportunity costs and idle gold," by I.Kaminska, Financial Times, October 21, 2015

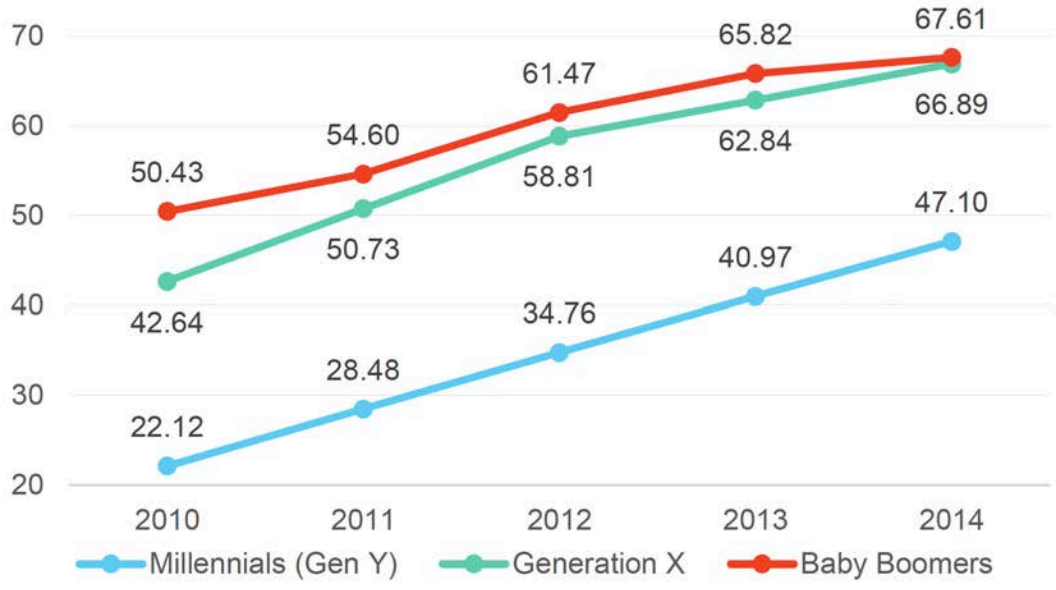
our economy, since—it is argued—they are so much more comfortable with "the sharing economy" than older Americans. There are two broad and conflicting views about this. The first holds that the millennial mindset really *is* different: that this supposedly commitment-averse generation is just less interested in owning things (houses, cars, bikes...), with all the hassles ownership entails, and so will be much more open to rideshare. The second view asserts that millennials don't *own* things because they can't *afford* them (crippled as their employment options were by the Great Recession of 2007-09), and that as they age, get jobs, marry, and have kids, they will be as eager to own cars as their parents were.

As you can imagine, the amount of rhetoric, assertion, and research piling up on both sides of this question is monumental. While we won't know for years which side is right, it is likely that both are: millennials are more open to sharing (or more accurately, renting), but are also eager to start owning as well. Recent research from the KBB division of Cox Automotive supports this. Their full report gives all the nuanced detail, but as summarized by spokesperson Michelle Krebs:

> *"**the highest users of car and ride sharing services — urban millennials — also had the highest intent to buy a car.** Among Generation Z* [aka younger millennials], *today's teens, 92% own or plan to own a vehicle, and 97% have or plan to get a license. That bodes well for car buying. But affordability remains an issue, as more than half of those surveyed* [cited] *the main reason for not owning a car as an inability to afford it: not the availability of sharing alternatives."*[146]

And actual buying behavior backs this up: millennials once did lag other generations in buying cars in America, but have been catching up fast, as this chart from the CAR report shows (and the trend has continued into 2015, according to Federal Reserve research, at https://goo.gl/yh8x80):

Light Vehicle Sales per 1,000 People, by Age Cohort



Source: U.S. Bureau of Census and J.D. Power data
Via: Center for Automotive Research (CAR)

[146] Patty Waldmeir, "Millennial Americans still aspire to be behind wheel of their car," Financial Times, 9/5/2016.

In just four years their relative rate of purchase rose from 44% of the Baby Boomer level to 70%. So this author concludes that Americans – at least outside expensive urban cores – are not quite ready to turn in their car keys.[147]

But as one last factor to consider, we again have "supply push." Even if you think Americans *won't* embrace rideshare *en masse* (outside a few expensive cities), even if you think autonomous-rideshare technology *won't* be up to the challenge, even if you think the economics *don't* pencil – keep in mind that some of the largest, wealthiest tech companies, here and abroad (especially in China) are investing massive sums into a future that involves some complex jumble of electrification, autonomy, and mobility services. (It seems to be an article of faith among these firms that mobility requires autonomy and that both require EVs, though we are not sure why they believe this.) They may make this work simply through brute force.[148] The evidence for OEM interest is clear, from the same Frost & Sullivan report we mentioned at the outset of this chapter:

OEM Investments in Mobility Services

	Drive yourself business models				Be driven Business Models						Smart Parking		Emobility	
OEM	One way CS	Two Way CS	P2P CS	Corp. CS/flex leasing	Ride sharing	Taxi Hail	Ride Hail	Chauffeur service	Bus/ Shuttle Tran-sit	Integrated Mobility	Parking Mgmt.	P2P Parking	EV Charging	Renewable energy
Daimler	✓			✓		✓		✓	✓	✓	✓✓	✓		
BMW	✓			✓	✓✓	✓				✓	✓✓		✓✓	✓
Audi		✓		✓										
Volvo		✓												
VW	✓	✓✓		✓		✓								
Ford	✓	✓✓	✓	✓					✓✓		✓			
PSA	✓✓		✓	✓										
Renault Nissan	✓✓			✓										
Toyota	✓✓	✓✓					✓							
Honda	✓													
GM	✓	✓	✓		✓		✓✓							
FCA	✓			✓										
Hyundai		✓												

✓ Subsidiary ✓ Through VC arm ✓ Strategic Partnership with investment ✓ Collaboration without investment

Source: Frost & Sullivan (June, 2016)

[147] For a bit more evidence on this point, note that the AAA's "American Driving Survey 2014-2015" reported that "**All metrics of driving increased slightly from 2014 to 2015.** The percentage of the population that drives increased from 87.3% in 2014 to 87.8% in 2015. In addition, data from the US Census Bureau indicates that the driving-aged population of the US increased by approximately 1.0% from 2014 to 2015. As a result, the number of drivers increased by approximately 3.3 million, or 1.5%, from 2014 to 2015. Furthermore, the amount that drivers reported driving each day increased very slightly, from 29.7 miles per day in 2014 to 29.9 miles per day in 2015. … [thus] the total number of miles driven by Americans increased by approximately 2.4%, from approximately 2.40 trillion miles in 2014 to 2.45 trillion miles in 2015." These data do not support a retreat from personal driving.

[148] Yet even here there is confusion. Some sources put Apple's goal of annual iCar sales at 500,000. But Apple's business model has always been to sell products at a strong premium, as owners cherish their design. How does Apple maintain a premium in a rideshare world, where there is no pride of ownership – indeed, no ownership at all? Perhaps Apple will not join the rideshare trend. Or maybe it would operate its own closed 100%-iCar rideshare fleet. Recent news stories assert that Apple is rethinking its plans for the car business.

To sum up, our view of mobility services is that, as currently configured, they represent a modest headwind to new-vehicle sales in 2025, and perhaps a modest tailwind to service volumes (as rideshare vehicles wear faster than personal cars). But if autonomy and mobility can be linked together, most likely in an urban environment, it is possible to see a much more negative impact across the board, as a large chunk of America renounces car ownership in favor of "eternal rental." In this case sales definitely fall, service work goes up, and new-car margins and all F&I income evaporate, with a transition from personal to fleet sales for all these cars. From the perspective of autumn 2016 we cannot see which way this goes, but we advise dealers to watch this very closely.

8. How will the regulatory and legal framework change?

It is hard to imagine any retail business more highly regulated than the modern new-car franchise. NADA estimates the annual cost of complying with all relevant regulations runs to well over $150,000 for the average dealership – and that is just for Federal rules, with state and local regulations adding more burden. Beyond the usual employee-protection requirements, accounting controls, and tax and other compliance rules that any business would face, the typical dealership also faces especially rigorous truth-in-advertising standards (given how major a purchase the car is) and environmental controls (linked in part to hazardous materials in the service shop). On top of these is a whole separate layer of financial regulations, given that most customers acquire their vehicles via lease or loan, often as part of the overall transaction at the dealership. Then there are of course the complex state-by-state rules that attempt to correct the inherent imbalance of power between dealers and OEMs, and impose other auto-retailing-specific consumer protections. And this is by no means a complete list.

Given this broad and deep insertion of regulatory (and ultimately, legislative) power into the dealership's operations, we realized we had to take a look at how the dealer's regulatory framework might change by 2025. Predicting change in regulations (beyond "they will become more stringent") is difficult to say the least, and predicting legislative or political change a decade out is probably a fool's errand. But we felt we had to make the effort, and so here we report back on three broad strands of regulatory developments, as revealed in discussions with attorneys, state dealer association executives, and other interested parties.

Existing regulatory issues

First, we took a look at the regulatory environment as it exists today, with any new issues put off to the side for now. There was general consensus that this environment will continue to become more onerous, as regulators refine and tighten their rules (this is the so-called "regulatory ratchet:" regulations only get tougher, not easier, over time). Within this environment particularly salient issues include:

- Higher regulatory burdens on cars themselves (more safety equipment, better mpg, lower emissions, etc.) raising their price and thus perhaps reducing sales – at some point;
- Increasing levels of litigation in the employment arena (e.g. unfair dismissal, harassment);

- Campaigns by consumer advocates and government agencies about the dealer's ability to sell F&I products and services. This trend is especially important since as we know the main source of new-car profit (margin) has already eroded;[149]
- And a cluster of other familiar challenges, ranging from warranty reimbursement rate setting to stop-sells on used cars with open recalls.

However, there were some positive comments on the existing regulatory environment. First, there was the sense that "it can't get much worse:" the pace of regulatory tightening over the last decade or so was seen by some interviewees as unsustainable. We'll see. But second was a surprising comment on how *protective* for dealers the regulatory burden is, in an odd way. As one interviewee put it: "Be careful what you wish for. All these regulations and the work associated with them may make new OEM entrants think twice before opting for company-owned stores."

In summary, our interviewees felt that, while the compliance burden was indeed getting heavier, it was nothing dealers had not seen before, and that in general they could manage. However, they did agree that the burden falls disproportionately heavy on smaller (rural) stores, who are not of sufficient scale to afford compliance officers and other resources for managing regulations, and so this would be another factor inducing owners of these stores to sell out to consolidating larger chains.

Emerging regulatory issues

There was more concern about the direction of *new* regulatory issues, which had not been faced before, or not in the same incarnation. We'll discuss just two here:

- *What will happen with broker-like buying services?* We are all aware of third-party online services that constantly teeter in the balance among lead generation, advertising placement, information provision, and actual brokerage activities. Dealers need clarification as to what rules apply to these services, so that they can take appropriate steps in response. The issue is one of a level playing field. If these services are *not* brokers, then dealers can create their own buying services to compete with them – imagine, just hypothetically, a dealer-owned "TrueDeal." If these services *are* brokers, then they should have to comply with the same rules as licensed brokers do (varying by state), including disclosures of fees and prices and contract terms, etc. In some respects the situation is similar to that of MS firms like Lyft: if its drivers are *employees*, then Lyft will have to provide them the (costly) protections and benefits required of employers; but if drivers are *contractors*, then they must be given more freedom than Lyft's current terms and conditions allow. We shall see how this plays out – the future is murky here.
- *What will happen to recalls when more of them involve software, which can be "fixed" via OTA data transmissions?* Dealers are already aware that the steadily rising tide of recalls (driven by a more aggressive NHTSA and by more defensive OEMs) is a double-edged sword: they bring more service work to the store, but they also dissatisfy customers and raise regulatory and business issues (e.g. as regards the ability to sell a used car that is under an open recall). Now we add in the OTA dimension, whereby a car can be constantly upgraded over time, just like your phone's apps. Under the current regime a car is considered compliant with safety regulations if it was *built* in accordance with them – what happens when compliance becomes a moving target, when

[149] A complete elimination of dealer F&I profit, even if unlikely, would possibly drive the average dealer out of business – unless OEMs stepped up with even more direct payments in order to keep the stores running.

software upgrades are possible? Do we enter a world of "permanent recall," when every car is out of compliance at some time during the year? Specifically, do new liabilities arise, if the OEM doesn't push out an OTA update on time, or if the dealer's tech misses a required software change? Do software updates fit within the current conception of what a recall is? Do we need a new regulatory regime to deal with OTA updates, which were not even conceivable when existing rules were written?

In sum, dealers will need to keep an eye on new regulatory issues that they have not seen before. But while we are in uncharted waters here, we expect that these topics will be sorted out over time.

Erosion of the franchised-dealer system.

Earlier we laid out the view that it was unlikely for incumbent OEMs to want to throw over the dealership system in favor of direct (company-store) sales, for various reasons, while new entrants would probably try to at least launch by going direct. However, the ability of either type of OEM to choose the company-store option will depend on the regulatory environment, and how welcoming it would be to "disruptors" who want to go their own way, without dealers.

DISCLAIMER: This whole topic is highly politicized. Tempers run hot on all sides. The brief discussion that follows will try to sidestep this storm of rhetoric, and concentrate entirely on how the regulatory environment, as it pertains to the dealership system as a whole, might evolve. We'll try to be dispassionate. Of course, since the author is not a qualified attorney, none of the following should be construed as legal advice.

Here are the conclusions we extracted from our interviews and research. There are at heart two issues here: can existing OEMs cut out their existing dealers by selling directly to customers, and can new OEMs who do not have existing dealers, start selling directly to customers?

- **On the first issue, the dominant opinion was that the regulatory environment would continue to constrain OEMs from going around their existing network, with a few exceptions.** There is quite a bit of talk about this (notably at a recent FTC hearing[150]), but little to no action, despite some state legislators of a more libertarian bent asserting that companies should be able to do what they want – forgetting the lessons of the "bad old days" of OEM abuse of dealers. There is also no clear constituency in favor of allowing this: even incumbent OEMs are supportive, generally, of the franchise system, since they have neither the funds to set up their own store system nor the appetite to deal with the massive backlash that their existing dealer network would certainly trigger.[151] And in any case, our interviewees were unanimous that any move in this direction would take a long time: "We'll be able to see this coming miles off, and will have time to react accordingly."
- Unfortunately, we have to point out that one reason that incumbent OEMs are not pushing for direct sales is that—they don't have to. As one factory interviewee put it: "The OEMs already control 95% of what dealers do and how dealers act, so why bother to forward-integrate, at great

[150] Not that the FTC has much basis to act, given the relevant rules are almost all state-based.
[151] As an interesting footnote to all this, one person told us that if incumbent OEMs wanted to experiment with "going direct," they could do this now anyway: find a remote rural market with no dealership within 25 miles or so, and open a store (of course, not all states allow this). To our knowledge, no OEM has tried this – which begs the question "Why not?" The lack of action may imply they see no benefit to tinkering with the current dealer system.

expense, just to get the last 5%?" Or as a dealer said, "Direct OEM contact with cust-omers, through websites, social media, lead generation, etc., is a bigger worry than direct sales to them – and since the OEMs already have the contact, they might as well let us sell the car!"

- **On the second issue, the consensus opinion was that slowly but steadily most states would move toward permitting (limited) direct sales by new entrants, such as Tesla.** The likely equilibrium, at least for the next few years, would be a compromise in which OEM X could sell direct in state Y, but only through a set number of locations, say 5 or 10. This would please the libertarian wing of most state houses, and also satisfy the wing that is more protective of the local businesses that dealers represent. Thus if Apple or a new Chinese OEM were to enter the USA, we could expect that they will consider a company-store network, and will be allowed to set one up, within limits. This in itself would not take anything *from* dealers (no dealership has ever lost a Tesla franchise), but on the other it does keep business from going *to* dealers (no dealer may get a chance to sell an Apple car, perhaps).

Taking this all into account, the regulatory outlook is difficult, but manageable. Existing issues dealers can deal with, emergent new issues will probably be resolved over time, and the likelihood of a dramatic movement away from the franchise system seems very low.

This does not mean, however, that dealers should be complacent. Tesla's masterful PR campaign shows dealers how the public can be mobilized to lobby on an issue that they had previously ignored. New generations of state lawmakers, with no experience of past battles (e.g. around the Ford Retail Network), tend not to see these issues with the same urgency as their predecessors did. An increasing libertarian tendency in various statehouses means many legislators see staying out of relations between factories and dealers as the best and default option.[152]

One final point: even if dealers do or do not manage to influence regulatory trends, or even if it is a question of whether should they do so or not, what they *must* do is make sure the regulatory framework, whatever it is, is applied fairly and consistently. If an OEM wants to use direct sales, that does not mean it can then bypass other rules (e.g. regarding pricing, advertising, licensing, financing) that it finds annoying. Dealers and their advocates must be vigilant to ensure that the playing field remains level. Just as Airbnb cannot sidestep safety regulations hotels must comply with – just because it has invented a new way to rent rooms; or just as Uber cannot refuse to accommodate disabled passengers as taxis do – just because it has invented a new hailing app; then new-entrant OEMs selling direct to the public must toe the same lines dealers are required to, from handling recalls, to ensuring truth in advertising, to acquiring all necessary licenses. It is fair for new entrants to compete via *new business models* (which will sink or swim as customers decide), but it is not fair for them to compete *by regulatory evasion.*

[152] But as one interviewee expressed in exasperation: "They confuse 'free markets' with 'no regulation.' These are not the same thing! Do they propose to play football with no yard markers?" Further, it seems libertarians forget that by "staying out" of these arrangements they are not freeing up a market: most notably, the existing regime already uses Federal anti-trust rules to constrain dealers from exercising any collective action relative to their suppliers. By "staying out" they would perpetuate a situation that is already far from a free market.

SPECIAL TOPIC

Chapter H: Connected Cars (CCs)

We are now at our last special tech topic, the "connected car." A simple idea, with complex implications.

As for the simple part, a connected car (CC) is one that has on-board telecommunications equipment (modem, radio, router, smoke signals, whatever), which allows the car to communicate with the outside world. For our readers who have been around for a while, this is in some ways the return of telematics, which attracted such frenzied interest a decade or so ago (the most prominent lingering reminder of which is GM's OnStar system[153]). The differences this time around are that the technology is much more advanced (faster, more reliable, capable of carrying more data), easily works in two-way mode (versus just uploading data from the car), and has a lot more data to work with (beyond just car speed and location, to engine operating parameters, state of wear of oil, etc.) The car essentially becomes just one more node on the vast "Internet of Things" (IoT), which in concept links together any item that has a processor in it, from smart home thermostats, to security cameras, to… cars.

Where it gets complicated is when we consider what we can use all this two-way data flow for. The exhibit shows some of these applications:

Potential Connected Car Applications

Source: "The Connected Car: Who's in the Driver's Seat"[154]

[153] We don't use the word "frenzied" casually: Goldman Sach's March 14, 2000 report, "GM's OnStar," valued the service at $15 per share of GM (which is pretty significant given that GM is currently trading at around $30-35), and urged its spin-off into a separate company, to monetize its value.
[154] A report by the British Columbia Freedom of Information and Privacy Association, 2016.

You can see that these applications range from already-available basic services like in-car music streaming, to very useful safety applications like automatic collision notification (if the airbags deploy, local emergency services are notified), to more speculative items (such ITS (intelligent transportation systems) functions, such as a "smart" traffic light notifying your car that it is about to turn green).[155] As a result of these proliferating uses and potential uses, OEMs are wiring up their cars at a rapid pace: IHS estimates that perhaps 30% of cars sold globally in 2015 had some degree of connectivity, and that by 2022 that number will be more like 75%.[156] Customers are therefore bombarded by OEM marketing communications about their branded connectivity services, which include offerings such as AudiConnect, BMW's ConnectedDrive, Chrysler's uConnect, OnStar, HondaLink, Hyundai BlueLink, Subaru's StarLink, Toyota's Entune, and many more. And of course there are the tech companies' entrants, such as Apple's CarPlay and Google's Android Auto, and retrofit applications like Vinli.

At this point the connections themselves are well ahead of the uses for them (just like a suburban development will build out the road network before the houses are erected), but these are gaining ground daily. Not that the field is without controversy: there is a huge debate going on about the interaction of CC and AV: do autonomous vehicles need to "talk" to other vehicles in order to avoid colliding with them, or can they just "see" them (via cameras or radar or other means), and then take action? There are also the perennial issues of data security and privacy, which we discussed in our IT section. Also, there are ferocious battles as to who owns car usage data, and how it might be monetized (e.g. if a hotel chain knows a car has been driving on I-90 for a few hours, can it send the driver's smartphone a discounted room offer, complete with reservation link?). And there is the whole topic of UBI (usage-based insurance), where leading insurers such as Progressive use car driving data to more accurately set policy premiums.[157]

But for the purpose of this report, which is to examine the impact on dealers, we can narrow our focus to the service lane.[158] If all goes as planned, by 2025, virtually every car will be able to do this:

- Collect data about the condition of many of its systems…
- Then either by itself or by uploading this data to the OEM, use predictive diagnostics to set the timing of required maintenance (before part failure), and then…
- Communicate service alerts to the driver and to the dealer, and…
- Allow the driver to use the car's systems to set a service appointment, which will trigger at the dealer the labor scheduling and parts ordering process (driven by analysis of diagnostic codes, cross-linked to technical service bulletins and recall notices in real time).
- Finally, the car will remind the driver as the appointment day and time approaches.
- The benefits to dealers should be significant. First, the car itself is now "marketing" service to the driver, which should increase service retention. Second, integrating diagnostics with dealer operations should allow more balanced and predictable bay and tech loadings, and accurate and on-time ordering and receipt of needed parts, which improves dealer efficiency and boosts customer satisfaction. And as customer service satisfaction climbs, the dealer should see higher vehicle sales, as the link between the two has been demonstrated.

[155] For a comprehensive Connected Car overview, see "How Will Big Data Revolutionize the Auto Industry?" by Colin Langan et al. at UBS, September 29, 2016.
[156] "Connected Car," IHS Automotive Fall Conference at the Frankfurt Auto Show, September 17, 2015.
[157] Or even go all the way to per-mile insurance charges: see for example www.metromile.com
[158] Another CC issue affecting dealers is the probability that OEMs will use CC technology to talk directly to customers, thereby bypassing dealers. This is also addressed in the IT section.

On the other hand, there will be challenges: customers as they arrive at the service lane will expect the service advisor to be fully informed about the car's status, and thus will have higher expectations for a faster and smoother hand-over process. And they may be more resistant to any attempts to upsell them service work, especially if such advice seems to contradict "what the car told me." As fixed operations expert Ted Fellowes has written, "The Service Advisor's role will change dramatically, from problem identifier to resolution facilitator" (a similar change to the one going on with the sales staff).[159] And the aftermarket will not stand idly by, but will come up with its own apps and devices (see for example Zubie) to tap into the data flow from cars, so dealers should once again not assume all this service work will automatically come to them. And finally, as mentioned earlier, if we do see OTA software updates becoming more common, and if these updates can be done while the car is in the customer's driveway, then he or she may actually be making relatively fewer trips to the dealership.

In summary, while the tech giants will be battling it out over broader issues of car connectivity, the impact on the dealer of 2025 should be generally positive, as CC technology acts to, on balance, more tightly and seamlessly link the car to the dealer's service lane.

CONCLUSION
The View To 2025

Here concludes our work. The Executive Summary at the outset of this report sums it up. After dozens of interviews, hours of conferences, thousands of miles of travel, and hundreds of articles, reports, and white papers, you have seen one view of the future. And to characterize it in brief, we repeat our summary from the first page: "Our overall top-level conclusion is that, over the next decade, franchised new-car dealers operating in the USA will see many changes to how their stores are set up and run, but no significant disruption to their underlying business model." From that short sentence flows a world of detail, of course, and a long list of implications for how dealers might plan for 2025.

So we hope that we have accomplished what we said at the start we set out to do: to sift through the vast mountains of data and opinions and insight available, to find within them the most useful insights that a dealer principal can actually use in her or his long-term planning process. Now it remains the responsibility of each dealer to digest these insights, assess their applicability to his or her own circumstances, and make the decisions that are best for those circumstances. With such thoughtful planning, we are expecting to find all of you still running successful stores in 2025!

* * *

[159] See www.fellowesresearch.com

Acknowledgements

In order to elicit the most candid and honest opinions from the dozens of people I interviewed for this project, I pledged to everyone involved that there would be no quote or viewpoint directly attributed to anyone's name, or to the name of anyone's company. Many interviewees were happy nonetheless to be quoted, but so as to avoid *any* risk of unwanted exposure, I have adhered to the "100% off the record" policy—except when an interviewee wanted to specifically attach her or his name to a viewpoint. And some interviewees did not want their name to be mentioned in *any* way, for a variety of reasons. Our thanks go out—anonymously—to these contributors, who included OEM executives, investors in dealerships, vendor executives, consultants, analysts, and of course dealers.

For the rest, however, permission was granted to acknowledge them here, and to thank them for their participation. This report is the culmination of their opinions and insights rather than mine: *without them this report would not exist*. And so, from myself personally and from NADA collectively, I'd like to thank the following for their time, advice, and insight: Jim Anderson, Jim Appleton, Cliff Banks, Mark Birdnow, Terry Burns, Marc Cannon, Jeff Carlson, Michael Charapp, Shaun Del Grande, Zach Doran, Robert Fogarty, Joe George, Don Hall, Jared Hamilton, Hoyt Harbin, Isabelle Helms, Mike Jackson, Eric Jorgensen, the always-insightful and candid Maryann Keller, Erin Kerrigan, Marie Knight, Doug Knust, Andy Koblenz, Jon Lancaster, Brian Maas, Brad Miller, Mark Normandin, Andy Moss, Chip Perry, Richard Sox, Steven Szakaly, Kyle Treadway, Peter Welch…. and all the other anonymous interviewees. My additional acknowledgements include:

- Thanks to the many others who sat in on the interviews and contributed their own insights, but who were not the primary interviewees (who are listed above);
- Thanks to NADA's diverse and helpful staff (including among others data wrangler Brian Cleary);
- Thanks to (also at NADA) the instigators of this project, Mike Regan and Bert Hulgrave, who identified and tracked down contacts for me, gave me immense authorial freedom – and endured my relentless, if rarely successful, attempts at humor;
- My gratitude goes to NADA itself as an organization, for commissioning me to write this report, as the research has been nothing but fascinating and enlightening;
- Thanks to Colin Langan and his employer, UBS, not only for excellent analytical reports, but for allowing me to insert questions in the UBS monthly dealer survey;
- For the two international chapters I am indebted to the ICDP, but especially to my primary contact there, Managing Director Steve Young: if there is some aspect of car retailing around the world that he has not seen, I am unaware of it;
- I also owe my gratitude to the thousands of dealer members of NADA, who collectively funded this project, and I fervently hope that they find the results worth their investment.

On a more personal level, I thank Dewey's Coffee in leafy Shaker Heights for providing me with many of the hours of seating, wifi, and coffee required to get this done. And finally, always, my thanks to my wife Ida, without whose support and encouragement this would have been a harder journey and a poorer result. She served as an audience-of-one during our frequent walks together, good-naturedly putting up with my monologues on topics as scintillating as warranty audits and CRM software, helping me clarify my thinking before I put fingers to keyboard.

And as for that thinking, I assure you that any and all errors of fact or interpretation that there may be in this report, are mine alone, and so are not to be attributed to anyone named above.

Sources Consulted

American Automobile Association, "American Driving Survey 2014-2015"

American Housing Survey (sponsored by the Department of Housing and Urban Development (HUD) and conducted by the U.S. Census Bureau).

Benito Arrunada of the Universitat Pompeu Fabra and the Barcelona Graduate School of Economics, various works

"Auto Care Factbook," various issues, The Auto Care Association, Bethesda, MD.

Automotive News, various annual data editions and online data center

AutoTeam America, "2025 Dealership Vision: What Lies Ahead!"

Ball, Ross, Eby, Molnar, and Meuser, "Emerging issues in safe and sustainable mobility for older persons," the Transportation Research Institute, in *Accident Analysis and Prevention*, 61, 2013.

J. Bax, "Traffic Tickets Are Big Business," National Motorists Association, 2007.

James Bessen, "Toil and Technology," *Finance & Development*, March 2015

Boston Consulting Group, "What's Ahead for Car Sharing?" 2016.

Martyn Briggs, of Frost & Sullivan, "Future of Mobility," Martyn Briggs, UBS Investor Summit, September, 2016.

"The Connected Car: Who is in the Driver's Seat?," British Columbia Freedom of Information and Privacy Association, 2016.

"A Machine That Sells Cars," *Business Week*, April 17, 1954.

Center for Automotive Research (Ann Arbor, Michigan): "The U.S. Automotive Market and Industry in 2025" and "The Impact of New Mobility Services on the Automotive Industry."

Business travel expense-tracking firm Certify, their 2016 report "Ride-Hailing Continues to Rise ."

Cox Automotive, "Car Buyer of the Future" and other research reports, at dealerlearningcenter.com

Consumer Reports, various issues.

Deloitte Touche Tohmatsu Limited, "2014 Global Automotive Consumer Study"

Utpal Dholakia, "Why Are There So Many Mattress Stores in America?" in *Psychology Today*, 9/22, 2015.

Ellencweig et al., "Fast forward: How US auto dealers can drive sustainable economic performance in the digital age," McKinsey & Company, April 2015.

EV Obsession, for EV sales data: http://evobsession.com/category/research/sales/

Experian Information Solutions, various Automotive Quarterly Briefing decks

Figenbaum et al., "Electric Vehicles – environmental, economic and practical aspects," Institute of Transport Economics, Oslo, September 2014.

Matt Flegenheimer, "In Bloomberg's City of Bike Lanes, Data Show, Cabs Gain a Little Speed," the New York *Times*, September 4, 2013.

Steven Gelber, *Horse Trading in the Age of Cars: Men in the Marketplace,* The Johns Hopkins University Press, 2008.

Goldman Sach's, "GM's OnStar," March 2000.

IHS Automotive, "Connected Car," Fall Conference at the Frankfurt Auto Show, September 17, 2015.

IHS Markit, various automotive sales forecast releases

Izabella Kaminska, "Self-driving cars, opportunity costs and idle gold,, *Financial Times*, October 21, 2015. Kaminska has written extensively in this field, and all her articles are worthwhile.

Kelly Blue Book, various reports, especially "Car Sharing Trends: Highlights Deck," March, 2016.

Kara Kockelman and associated authors, various reports, especially "Forecasting Americans' Long-Term Adoption of Connected and Autonomous Vehicle Technologies," University of Texas at Austin, April 2016. Kockelman is both insightful and prolific, such that her website is worth checking frequently.

Steve LeVine, "Investors have placed a one-way bet on Uber," *Quartz*, August 5, 2016

Lunetta and Coplon-Newfeld, "Multi-state Study of the EV Shopping Experience," Sierra Club, 2016.

Jerome Lutin, NJ Transit (retired), in "The Implications of Automated Vehicles for the Public Transit Industry," June 22, 2016 Presentation to the I-95 Corridor Coalition

A. McCartt's (of IIHS) presentation to the NTSB Safety, Mobility, and Aging Drivers Forum, Nov., 2010.

E. Newcomer, "Uber Loses at Least $1.2 Billion in First Half of 2016," *Bloomberg* online, August 25 2016

The NJ Coalition of Automotive Retailers, specifically the undated article "Looking Back to Look Ahead."

Brian Ratchford, "Retail Productivity," in *Handbook on the Economics of Retailing and Distribution*, edited by Emek Basker, Edward Elgar Publishing, 2016.

The superb Rideshare Guy blog at www.therideshareguy.com , run by Harry Campbell.

Jeremy Sinek, "The book on Genesis: How Hyundai plans to sell a luxury brand," *The Globe and Mail*, August 18, 2016.

Bryant Walker Smith, various presentations and blog posts, on the law and autonomous vehicles.

Taxicab, Limousine, and Paratransit Association website.

Taxi Research Partners website.

The Transport Politic website, databook section.

UBS Securities LLC, numerous reports, all authored in whole or in part by Colin Langan.

Union of Concerned Scientists, "Electric Vehicle Survey Methodology and Assumptions," May 2016

UK Department of Transport, "National Travel Survey 2014."

United Nations, World Urbanization Prospects project, "2014 Revision of World Urbanization Prospects"

US Census Bureau, various reports

US Federal Highway Administration, "Traffic Volume Trends," various issues

US Office of the Special Inspector General for the Troubled Asset Relief Program (SIGTARP), "Factors Affecting the Decisions of General Motors and Chrysler to Reduce Their Dealership Networks, "

Patty Waldmeir, "Millennial Americans still aspire to be behind wheel of their own car," *Financial Times*, September 5, 2016

Max Warburton, "Chinese Autos: Would You Like Fries With That? The "McDealering" Of Chinese Cities... In 5 Charts," AllianceBernstein LP, December 16, 2015.

Tom Webb, Cox Automotive, "Top Trends That Will Drive the Used Vehicle Market," presented at the NADA's 2016 convention in Las Vegas

Thomas Wendt of Roland Berger, "An industry in cruise control – What's next for the US suppliers?" at the OESA meeting March 27, 2014.

Yuksel, Tamayao, Hendrickson et al., 'Effect of regional grid mix, driving patterns and climate on the comparative carbon footprint of gasoline and plug-in electric vehicles in the United States," *Environmental Research Letters*, 11, 2016.

Other sources consulted for background information (if not for specific quotes or data) included various NADA publications (e.g. the *Dealership Workforce Study*); reports (beyond those cited in the text) from Cox Automotive (whose dedication to both research our industry and make the results of that research widely available is very much appreciated); white papers from various consultancies (including McKinsey, KPMG, Roland Berger, Alix Partners, and more); numerous reports from the always-insightful, helpful, and prolific Michael Sivak (at University of Michigan - Sustainable Worldwide Transportation); and works by various authors at that transportation research powerhouse, the University of California at Davis's Institute of Transportation Studies.

As a last word on sources, a cautionary one, I will weigh in with a personal comment on available research on autonomous vehicles and mobility services. In my three decades of studying the automotive industry I have rarely seen *more* research of *lower* quality than in these areas. The great bulk of it is based on a series of breathless "what if?" assumptions which the authors barely bother to test objectively. For example, anyone who on the one hand cites 200,000 annual traffic fatalities in India as a motivation to introduce AVs (and that is a very valid motive!), should look at traffic on the ground in Mumbai and explain exactly how this "tech fix" is going to work. Or anyone who estimates MS penetration by extrapolating from Manhattan to Montana, should take a good look at how the use cases vary in each location. So I advise students of AV and MS tech in particular to read research on these fields with a very critical eye, in order to distinguish insight from advocacy.